S/140/60/000/006/016/018
C111/C222

Determination of the Periodic Solution of a Differential Equation

the Fourier coefficient a_o must be $= 0$. It is stated : In order that to the generating solution (5) there correspeonds a $2\tilde{\pi}$ -periodic solution of (1) which for $\mu = 0$ degenerates in the generating solution, it is necessary and sufficient that N_o is a simple root of the equation

$$(13)\quad \int_0^{2\tilde{\pi}} F\left[\tau, N_o + \sum_{n=1}^{\infty}(a_n \cos n\tau + b_n \sin n\tau), \sum_{n=0}^{\infty}\frac{1}{n}(-a_n \sin n\tau + b_n \cos n\tau), 0\right] d\tau = 0$$

and it holds

$$(16)\quad \int_0^{2\tilde{\pi}} f(t)dt = 0$$

The author gives more complicated conditions which are based on the results of N.P. Yerugin (Ref. 3), for the case that N_o is a multiple root. In the first case (N_o - simple root) for the effective determination of the

Determination of the Periodic Solution of a Differential Equation

proved periodic solution it is put

(20) $$x = x_0 + \mu x_1 + \mu^2 x_2 + \dots ,$$

where x_0 is the generating solution and x_1, x_2, x_3 are unknown 2π - periodic functions. If $x_1, x_2, \dots, x_{i-1}$ are calculated and if they all are periodic, where

(26) $$x_j = \varphi_j(t) + N_j \quad (j = 1,2,\dots, i-1)$$

where $\varphi_j(t)$ are 2π - periodic and N_j are constants, then for known $N_1, N_2, \dots, N_{i-2}$ one obtains for N_{i-1} :

(27) $$N_{i-1} = - \frac{\int_0^{2\pi} \left[\left(\frac{\partial F}{\partial x}\right) \varphi_{i-1}(t) + \left(\frac{\partial F}{\partial \dot{x}}\right) \dot{\varphi}_{i-1}(t) + F_i(t) \right] dt}{\int_0^{2\pi} \left(\frac{\partial F}{\partial x}\right) dt}$$

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88190

S/140/60/000/006/016/018
C111/C222

Determination of the Periodic Solution of a Differential Equation

where the parantheses ( ) denote that the expressions are calculated for the generating solution, and where F_i is a rational entire function of the $x_1, x_2, \ldots, x_{i-2}$ and the partial derivatives of F with respect to x and $\dot{x}$ calculated for the generating solution.
To every simple root N_o of (13) there uniquely corresponds a series (20) satisfying (1) and representing the single sought 2π - periodic solution converging for sufficiently small μ.
There are 3 references : 2 Soviet and 1 French.

ASSOCIATION: Leningradskiy zaochnyy politekhnicheskiy institut
(Leningrad Polytechnical Correspondence Institute)

SUBMITTED: November 22, 1958

Card 4/4

L 18984-63 EWT(d)/BDS AFFTC/ASD/AFMDC/ESD-3/AEGC Pg-4/Pk-4/
P1-4/Po-4/Pq-4 BC

ACCESSION NR: AP3005683 S/0146/63/006/004/0098/0109

AUTHOR: Gleboy, Ye. P.; Potapenko, A. A.

TITLE: Some problems in the theory of a gyro-horizon compass

SOURCE: IVUZ. Priborostroyeniye, v. 6, no. 4, 1963, 98-109

TOPIC TAGS: gyrocompass, compass theory

ABSTRACT: A theoretical analysis of this problem is presented: Considering that the Earth is oblate, are there any directions which the z-axis of a gyro frame would preserve under conditions of the arbitrary movement of the suspension point (with specified initial conditions and parameters of the frame)? The analysis shows that the oblateness of the Earth causes: (a) a certain variation in conditions of undisturbed motion, and (b) some variation of the nature of the movement of the gyro-horizon-compass sensing element with respect to the position under undisturbed-motion conditions (with arbitrary movement of the

Card 1/2

L 18984-63

ACCESSION NR: AP3005683

suspension point) when the Earth is assumed to be a sphere. In general, these variations are within 1%. Orig. art. has: 4 figures and 41 formulas.

ASSOCIATION: Severo-zapadny*y politekhnicheskiy institut (North-Western Polytechnic Institute)

SUBMITTED: 27Oct62 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: AE NO REF SOV: 002 OTHER: 000

Card 2/2

32736
S/140/61/000/004/009/013
C111/C222

16.3400

AUTHOR: Potapenko, A. A.

TITLE: On the integration of the equation of Hill

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 4, 1961, 104-111

TEXT: The author considers the equation

$$\frac{d^2y}{d\tau^2} + \psi(\tau, \mu)\, y = 0 \qquad (1)$$

where

$$\psi(\tau, \mu) = a_0 + \sum_{n=1}^{\infty} a_n \cos n\tau \qquad (2)$$

and

$$a_0 = \sum_{m=0}^{\infty} a_{0,m}\, \mu^m,\quad a_n = \sum_{m=1}^{\infty} a_{n,m}\, \mu^m \quad (n=1,2,3,\ldots), \qquad (3).$$

He investigates the cases $a_{0,0} < 0$ and $a_{0,0} = \frac{k^2}{4}$, where k is an integer. In the first case the author seeks the solution with the

Card 1/4

On the integration of the . . .

$$\left.\begin{aligned} y_1(\tau) &= \cos c\tau\left[1+\sum_{s=1}^{\infty}\sum_{n=1}^{\infty}A_{s,n}\mu^s\cos n\tau\right]-\sin c\tau\sum_{s=1}^{\infty}\sum_{n=1}^{\infty}B_{s,n}\mu^s\sin c\tau,\\ y_2(\tau) &= \cos c\tau\sum_{s=1}^{\infty}\sum_{n=1}^{\infty}B_{s,n}\mu^s\sin n\tau+\sin c\tau\left[1+\sum_{s=1}^{\infty}\sum_{n=1}^{\infty}A_{s,n}\mu^s\cos n\tau\right]\end{aligned}\right\} \quad (39)$$

Under the assumption $a_k = 0$ the second case $a_{o,o} = \frac{k^2}{4}$ is treated according to the same method. The author also finds a complex solution the real part and imaginary part of which form a fundamental system.

There are 3 Soviet-bloc and 5 non-Soviet-bloc references. The reference to the 4 English-language publications read as follows: N. V. Mac-Lachlan. Teoriya i prilozheniya funktsiy Mat'e (Theory and application of Mathieu functions), IIL, M., 1953; E. Ince. General solution of Hill's equation. Monthly Notices of Royal Astronomical Society, v. 75, p.436, 1915; E. Ince. (zamechaniya k [6]). [Remarks to (Ref. 6)] , ibidem v. 76, p. 431, 1916; E. Ince (Dal'neyshiye zamechaniya k [6])

Card 3/4

32736
S/140/61/000/004/009/C13
C111/C222

On the integration of the . . .

[Further remarks to (Ref. 6)], ibidem v. 78, p. 141, 1917.

ASSOCIATION: Severo-zapadnyy zaochnyy politekhnicheskiy institut
(North-Western Polytechnical Correspondence Institute)

SUBMITTED: March 19, 1959

Card 4/4

GLEBOV, Ye.P. (Leningrad); POTAPENKO, A.A. (Leningrad)

Method of consecutive approximations. Izv. vyz. ucheb. zav.; mat. no.5:39-42 '63. (MIRA 16:11)

Potapenko, A.A.

POTAPENKO, A.A.

Some applications of IA. Mikusinskii's calculus of operations to automatic control systems with random disturbances [with summary in English]. Vest. LGU no.19:129-134 '57. (MIRA 11:1)
(Calculus of operations) (Automatic control) (Gyroscope)

AUTHOR: Potapenko, A.A. 43-58-13-13/13

TITLE: The Determination of the Number of Oscillations of a Mechanic System (Opredeleniye chisla kolebaniy odnoy mekhanicheskoy sistemy)

PERIODICAL: Vestnik Leningradskogo universiteta, Seriya matematiki, mekhaniki i astronomii, 1958, Nr 13(3), pp 156-159 (USSR)

ABSTRACT: Let the motion of a material point be described by the equations

$$\ddot{x} = -\alpha x - \beta x^3 - \nu \dot{x}^2 - F, \qquad \dot{x} > 0$$

$$\ddot{x} = -\alpha x - \beta x^3 + \nu \dot{x}^2 + F, \qquad \dot{x} < 0.$$

The author puts $y = x^2$ and determines $\dot{x}$. Then those values $x_0, x_1, \ldots$ are sought in which the velocity vanishes. The counting of the arising intervals of the x-axis gives the sought number of oscillations. The determination of the values $x_0, x_1, \ldots$ is carried out from transcendental equations of the type "polynomial = exponential function". The method can be generalized to the equations of motion

Card 1/2

The Determination of the Number of Oscillations of a Mechanic System 43-58-13-13/13

$$\ddot{x} = \varphi(x) - \nu\dot{x}^2 - F, \qquad \dot{x} > 0$$

$$\ddot{x} = \varphi(x) + \nu\dot{x}^2 + F, \qquad \dot{x} < 0,$$

where $\varphi(-x) = -\varphi(x)$, sign $\varphi(x) = -$ sign x, $\nu, F > 0$.
There are 3 references, 2 of which are Soviet and 1 English.

SUBMITTED: February 18, 1957

1. Oscillation--Mathematical analysis 2. Mechanics--Theory

Card 2/2
USCOMM-DC-55961

POTAPENKO, A.A.

Integration of Hill's equation. Izv. vys. ucheb. zav.; mat. no.4:104-111 '61. (MIRA 14:7)

1. Severo-zapadnyy zaochnyy politekhnicheskiy institut.
(Functions, Entire)
(Differential equations, Linear)

POTAPENKO, A. I.

"A Contribution to the Problem of Photoperiodism Physiology," Dok. AN, 45, No. 2, 1944;

"On the Adaptation Value of the Photoperiodic Reaction," ibid., 46, No. 3, 1945;

"Attenuation of Photoperiodic Impulses," ibid,, 59, No. 5, 1948;

"The Origin of Impulses for Blossoming at Periods of Growth," ibid., No. 6, 1948;

"Study of the Photoperiodism of 80 Wild-Growing and Weedy Species of Plants," ibid., 66, No. 6, 1949.

CA

11D

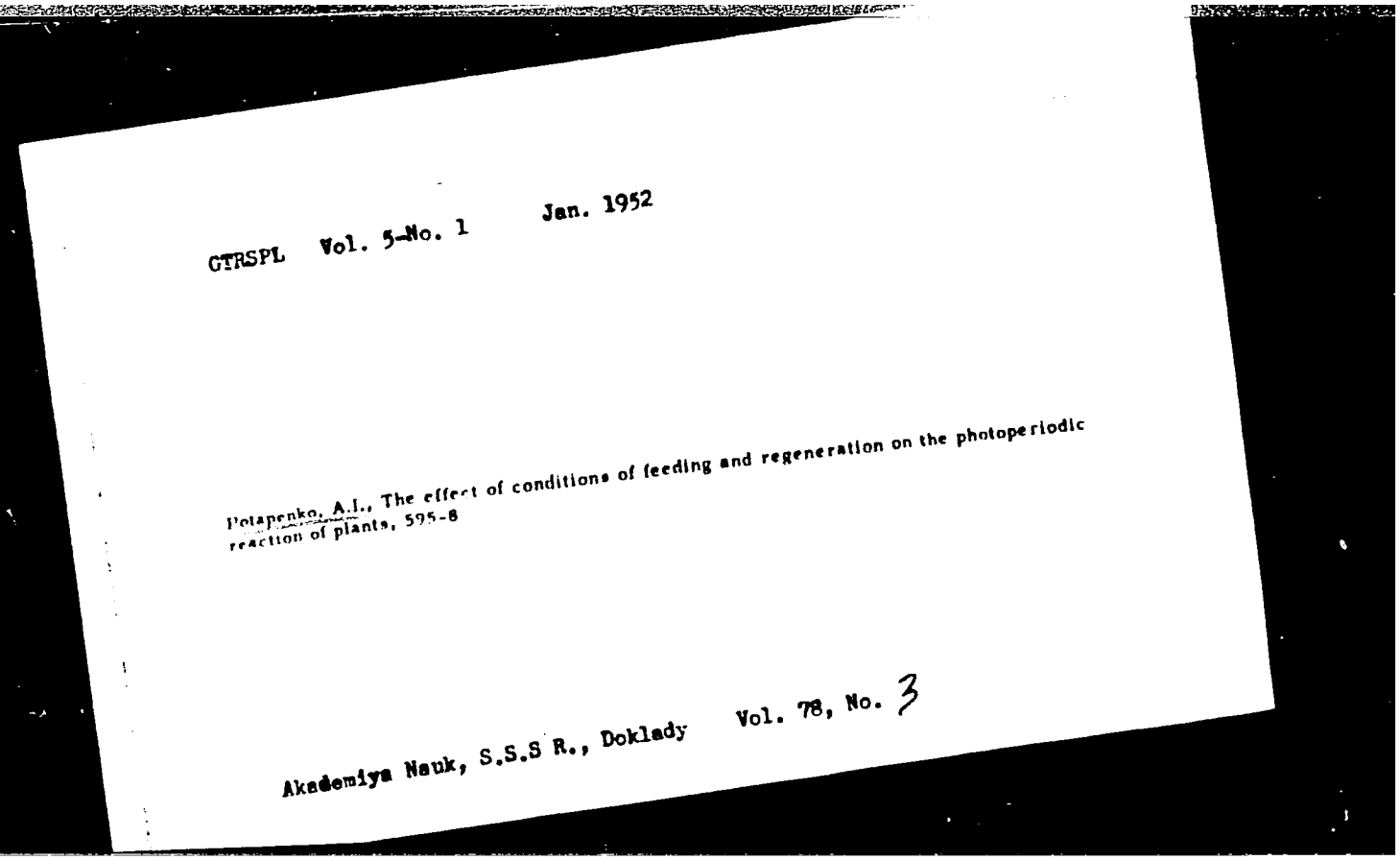
Nutrient substances as carriers of light-dark influences in leaves. A. I. Potapenko. *Doklady Akad. Nauk S.S.S.R.* 71, [illegible]. The "dark" and the "light" conditions within a leaf are not established instantaneously, and intermediate, carry-over, periods exist. Decrease of light intensity striking a *Perilla* leaf, which is one of the sole leaf pair left on the specimen (the other leaf receiving continuous illumination), causes retardation of flowering of the plant and in extreme cases may stop it entirely. A sharp curtailment of nutrient stores (secured by removal of the root system) in grapes increases the effectiveness of short illumination periods (short days) in their retarding effect on plant growth. Conversely, stored nutrients have the same effect on growth in short-day conditions as has the long day in its action through the leaf mechanism without food stores. In 16-17-hr. day situation grapes complete the plant growth (although later than in 10-13-hr. day conditions) and growth stops in spite of stores of nutrients being present. With continuous illumination growth does not stop. The explanation advanced is that leaves function photoperiodically only when the products produced by their activity are actually in demand at the sites of growth, etc. A growth "spot" supplied by food from stored sources is removed from the effect of photoperiodicity, while a similar structure actively supplied from the leaf mechanism from the beginning of its development is highly dependent on photoperiodicity. The results indicate that the "plastic" products are the carriers of dark-light effects of leaf metabolism.

G. M. Kosolapoff

C. A.
1951

Biological Chemistry
II Botany

Effect of nutrition conditions and regeneration on the photoperiodic reaction of plants. A. I. Potapenko. *Doklady Akad. Nauk S.S.S.R.* 76, 905-8(1951). Generally under conditions of drought during long daylight periods plants such as the sunflower show improved rate of growth when they are placed in artificial conditions of a shorter day, with usual soil nutrition. The flower formation occurs when there is a natural balance between the vegetative growth rate and nutrition conditions: such as poor nutrition in drought along with slow rate of growth. When such a relationship is disturbed, such as the case of a plant that began to flower under poor nutrition and low growth rate conditions and was then placed in a condition of abundant nutrition, the reproductive organs that were already present atrophy and the plant growth takes over the reproductive function. When exposed to sunlight for short periods the plants could utilize the nutrients only for flowering and reproductive functions. Specimens of *Chenopodium* that were cut down until only one leaf remained on the plant, in short day conditions expend their efforts on regeneration and the remaining leaf usually increased in size; the sites of growth supplied by the leaf usually begin an immediate formation of reproductive organs. G. M. Kosolapoff



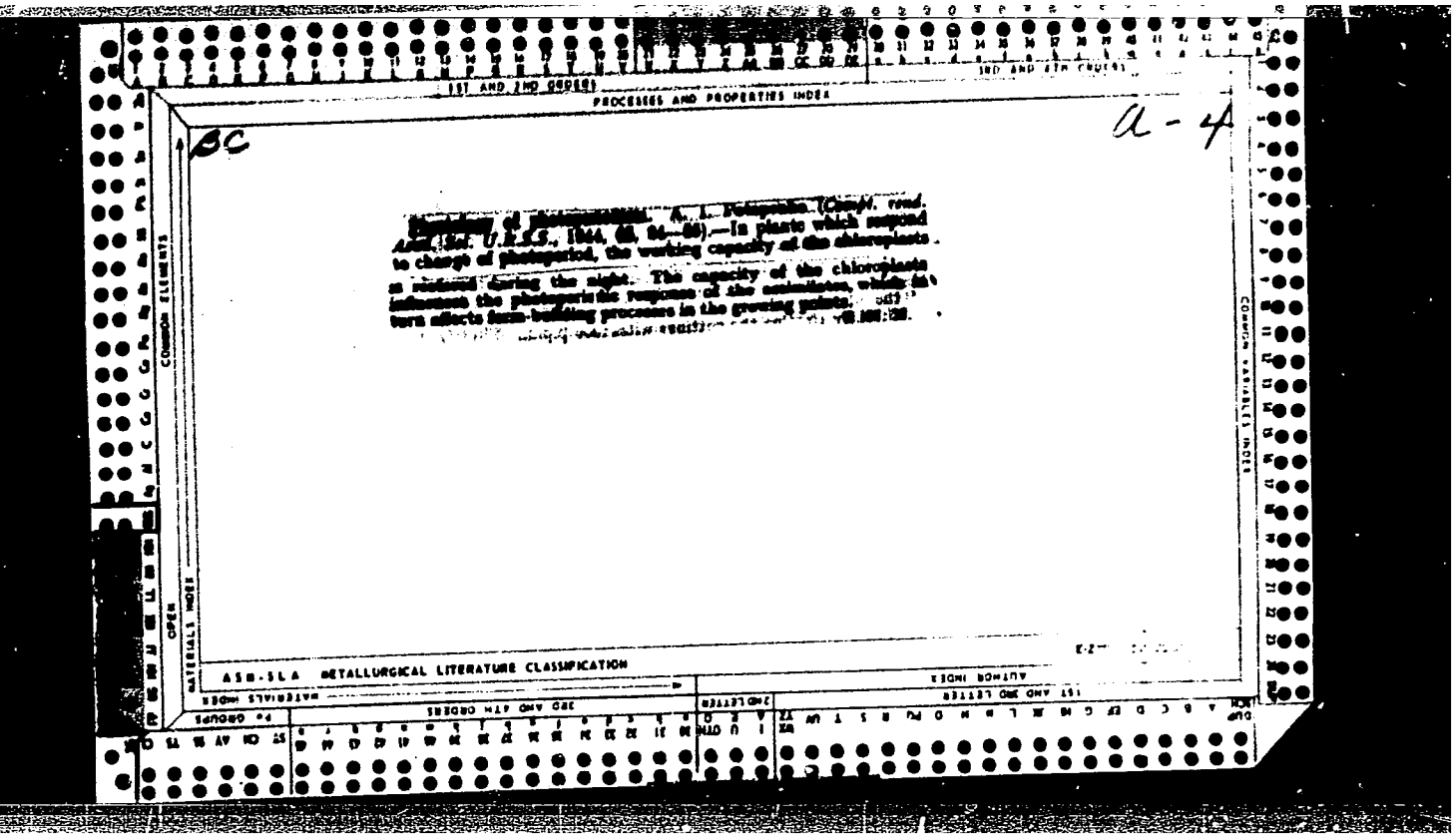
GTRSPL Vol. 5-No. 1 Jan. 1952

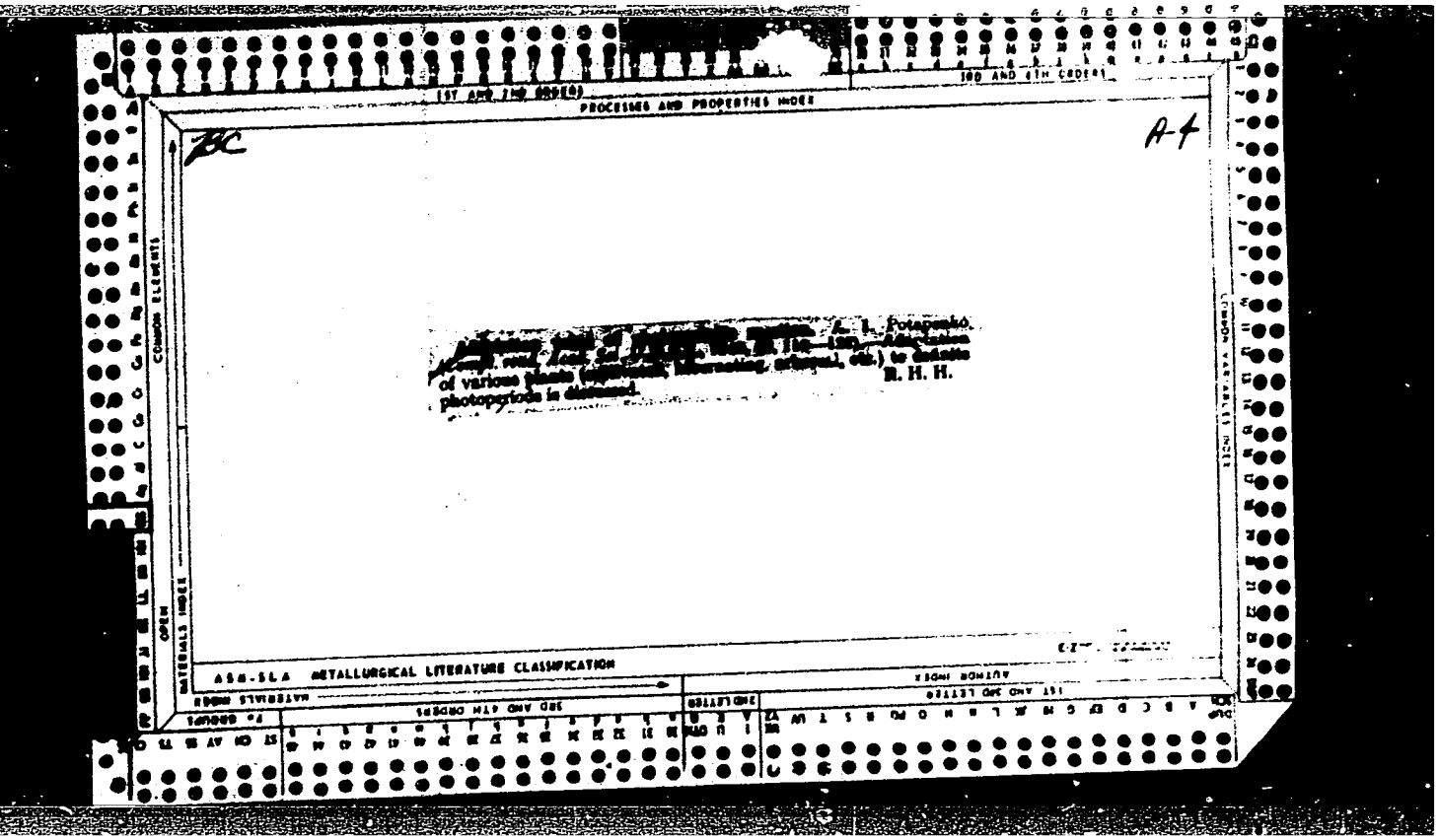
Polapenko, A.I., The effect of conditions of feeding and regeneration on the photoperiodic reaction of plants, 595-8

Akademiya Nauk, S.S.S R., Doklady Vol. 78, No. 3

POTAPENKO, A.P.

Evaporation of sulfate liquor in a film-type apparatus at the Zhidachev Cardboard and Paper Combine. Bum. i der. prom. no.1:16-20 Ja-Mr '65. (MIRA 18:3)





POTAPENKO, A.P.

Burning black liquor in modern injection-type apparatus.
Bum. i der. prom. no.2:15-19 Ap-Je '65. (MIRA 18:6)

POTAPENKO, A.P.

Regeneration of lime in the production of sulfate pulp.
Bum. i der. prom. no.4:17-19 O-D '65. (MIRA 18:12)

41313

S/170/62/005/010/006/009
B104/B186

AUTHORS: Povapenko, A. Ye., Kostenko, P. P.

TITLE: Effect of an electric field on a flame

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 10, 1962, 73 - 76

TEXT: It is sought to improve the break-off characteristics of a burner by applying a constant electric field. The experiments were made with a "Pyrex"-glass nozzle burner with a nozzle of 9.8 mm. Inside the burner, at a distance of 26 mm from its orifice a central electrode was used and outside it a ring electrode of 32 mm diameter, the distance between the latter and the orifice being varied during the experiments. A mixture of air and ethyl alcohol was burned at 100°C. At d-c voltages between 10 and 35 kv and with different polarities of the two electrodes, the air supply was increased until the flame broke off. When the ring electrode was placed directly at the orifice (h=0) and a negative field (in relation to the central electrode) was applied, the air supply had to be considerably increased to break off the flame at a given fuel consumption. A positive polarity of the central electrode impaired the break-off characteristics.

Card 1/2

S/194/61/000/012/079/097
D273/D301

AUTHORS: Lozovskiy, N. S. and Potapenko, A. Ye.

TITLE: On the question of ultrasonic inspection in the formation of an ice-bed cylinder

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1961, 22, abstract 12E120 (Tr. Ukr. n.-i. in-ta organiz. i mekhaniz. shakhtn. str-va. 1960, no. 11, 246-261)

TEXT: Present methods of control are considered as well as their shortcomings, and a description is given of an investigation relating to the invention of an ultrasonic apparatus for measuring ice-bed walls at great depths. The velocity of sound in thawed and frozen strata was measured by the duration of elastic pulses between frozen columns and hydro-observation slots. The conditions of propagation of ultrasonic energy through various layers and strata have been examined. It is noticed that to control freezing one can use either an echo-method or a sound propagation method.

Card 1/2

28158
S/122/61/000/003/012/013
D241/D302

1.1110

AUTHORS: Verezub, V.N., Candidate of Technical Sciences, Potapenko, A. Ye., and Chistyakov, Ye.S., Engineers

TITLE: Investigating the ultrasonic grinding of the cutting tool

PERIODICAL: Vestnik mashinostroyeniya, no. 3, 1961, 67-69

TEXT: The article examines ultrasonic grinding of ceramic and carbide tips. The equipment used consisted of a generator and a magnetostrictive head, with a power of 600 wt and a range of frequencies 16 - 30 Kc. The circuit of the generator has special features. The RC exciter permits a stepless variation of frequency. The output of the generator is amplified in 3 cascades, and is fed to the output power amplifier which incorporates 4 valves, GK-71. There is a common coil for excitation and magnetization of the vibrator. The magnetostrictive head contains the transformer, exponential concentrator and the working tool which is threaded into the concentrator. The transformer represents a packet of nickel

Card 1/3

28158

S/122/61/000/003/012/013
D241/D302

Investigating the ultrasonic ...

plates. A selection of weights ensure a static pressure from 500 to 800 g. A dial indicator is used to measure the infeed. Boron carbide suspension in water as well as silicon carbide were employed as abrasives. Tips made of ceramic ЦМ (TsM)-332 and carbide T15K6 were ground by ultrasonics. The process consisted of removing a thin layer from a small area as well as the formation of shallow grooves with various shapes. Stringent requirements were imposed on the form of the grooves, and their surface finish. The shapes of tools used in the experiments are illustrated. The investigation concerned the effect of depth of machining, area and shape of tool, as well as the size of grain and the material of abrasive on the grinding of ceramic and carbide tips. The results reveal that the ceramics are machined faster than the carbide tips. The length of the tool has little effect on the duration of machining. The intensity of ultrasonic machining depends upon the material of the abrasive and the size of its grains. The surface finish is of the 7th- 8th class. The profile of the cutting edge of carbide tips is of better finish than in the case of ceramics. The ultrasonic method eliminates the most laborious operation of

Card 2/3

28158
S/122/61/000/003/012/013
D241/D302

Investigating the ultrasonic ...

lapping. Output on ceramic tips when using boron carbide is 75 - 90 mm^3/min, whereas in the case of carbide tips it reaches 11 - 14 mm^3/min. According to the data of VNII, the wear of the grinding wheel as a percentage of material removal of a carbide tip is 400 - 500; it is only 100 in the case of ultrasonic machining. Tests were carried out on the stability of tips which were clamped in the holders and consisted of turning steel 40. There are 6 figures and 1 table.

Card 3/3

S/145/60/000/008/006/008
D211/D304

AUTHORS: Verezub, V.N., Candidate of Technical Sciences,
Potapenko, A.Ye., Senior Lecturer, and
Chistyakov, Ye.S., Engineer

TITLE: An ultrasonic method of forming chip-breakers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye, no. 8, 1960, 115 - 119

TEXT: Chip-breakers on tools made of ceramics and hard alloys are usually produced by abrasive or electric spark methods. The author recommends the method of ultrasonic vibrations. This method eliminates thermal stresses in the tip, during the formation of the chip-breaker. Experiments were carried out with an installation containing a magnetostriction vibrator which is described. Power was supplied by a УЗГ (UZG) 600 watt generator, with a frequency range of 60 - 30 Kc/s. The required static pressure between the vibrating tool and the tip to be treated (500 - 800 g) was caused by weights. The abrasive was either boron carbide or silicon carbide. Experiments on ЦМ 332 (TsM 332) ceramic and Т15К6 (T15K6) hard alloy

Card 1/2

VEREZUB, V.N., kand.tekhn.nauk; POTAPENKO, A.Ye., starshiy prepodavatel'
CHISTYAKOV, Ye.S., inzh.

Using the method of ultrasonic waves for making chip breakers.
Izv.vys.ucheb.zav.; mashinostr. no.8:115-119 '60. (MIRA 13:9)

1. Khar'kovskiy aviatsionnyy institut.
(Metal cutting)
(Ultrasonic waves—Industrial applications)

POTAPENKO, Aleksandr Yefimovich

POTAPENKO, Aleksandr Yefimovich; UDAL'TSOV, A.N., glavnyy red.; BRYANTSEVA, V.P., inzh., red.

[Ultrasonic methods of studying cavitation] Ul'trazvukovye metody issledovaniia kavitatsii. Moskva, In-t tekhniko-ekon.inform., 1956. 9 p. (Informatsiia o nauchno-issledovatel'skikh rabotakh. Tema 20, no.I-56-129) (MIRA 11:2)
(Cavitation) (Ultrasonic waves--Industrial applications)

VEREZUB, V.N., kand.tekhn.nauk; POTAPENKO, A.Ye., inzh.; CHISTYAKOV, Ye.S., inzh.

Investigating the use of ultrasonic methods for sharpening metal-cutting tools. Vest.mash. 41 no.3:67-69 Mr '61. (MIRA 14:3)
(Ultrasonic waves—Industrial applications)

L 46607-66 EWT(d)/EWT(l)/EWP(m)/EWT(m)/EWP(t)/T-2

ACC NR: AP6010268 (A) SOURCE CODE: UR/0145/66/000/001/0107/0112

AUTHOR: Munshtukov, D.A.; Nechitaylo, K.F. (Engineer); Potapenko, A. Ye (Engineer)

ORG: None

TITLE: The similarity of nonstationary gas flow in exhaust systems of two-stroke engines

SOURCE: IVUZ. Mashinostroyeniye, no. 1, 1966, 107-112

TOPIC TAGS: exhaust gas dynamics, engine exhaust system, exhaust gas removal system, gas flow

ABSTRACT: Experimental investigations of the most important similarity criteria for the modeling of gas-dynamical processes in exhaust systems of two-stroke engines are presented. Following the presentation of the original criteria and similarity parameters, the authors describe the experimental setup, the operating principles of the modeling device, and the experimental methodology. The experimental results showing the influence of the various criteria indicate, among others, that there exists a region of partial self-similar flow of the gas. The paper was presented by A. I. Borisenko, Professor of the

Card 1/2 UDC: 621.43.06

POTAPENKO, B.G.

Stereophotogrammetric mapping of submerged relief. Trudy Vost.-Sib. fil. AN SSSR no.10:244-267 '59. (MIRA 13:4)
(Photogrammetry) (Ocean bottom--Maps)

POTAPENKO, B.G., kand.tekhn.nauk

Mirror method for connecting with mine plumb bobs. Izv. vys. ucheb. zav.; gor. zhur. no.9:34-38 '60. (MIRA 13:9)

1. Irkutskiy gornometallurgicheskiy institut. Rekomend. Sovetom gornogo fakul'teta.
(Mine surveying)

POTAPENKO, B. G.

"Stereophotogrammetric Cartography of Underwater Relief." Cand Tech Sci, Irkutsk Inst of Mining and Metallurgy, Irkutsk, 1954 (RZhGeol, No 1, 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

POTAPENKO, B.T. (Gor'kiy); MARTOVSKIY, V.A. (Gor'kiy); KRASNOV, V.Ya. (Gor'kiy); GAGANOV, N.I. (Gor'kiy)

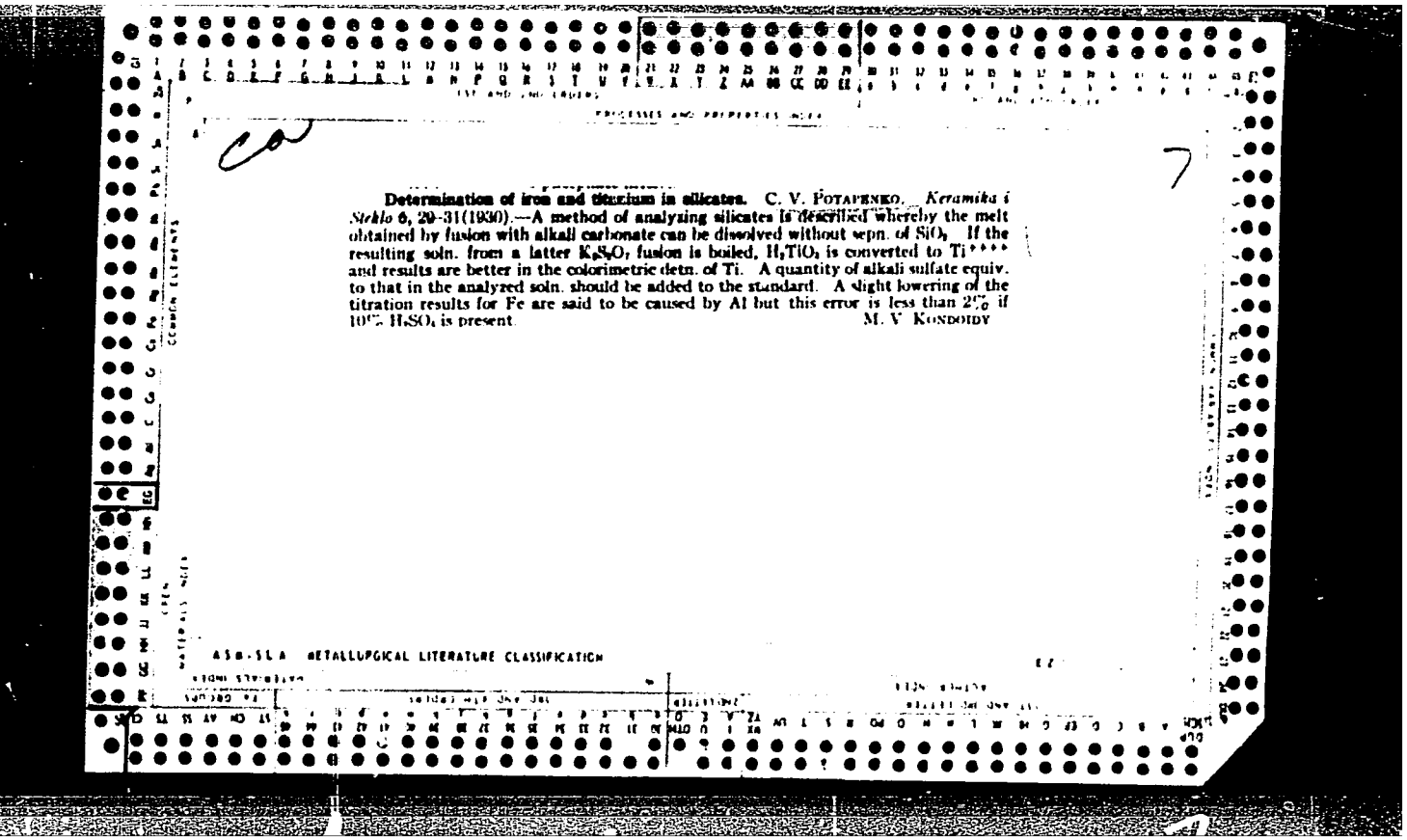
Assembly of a river water intake structure in large units. Vod. i san. tekh. no.11:37-39 N '61. (MIRA 15:6)
(Gorkiy--Water-supply engineering)

GAGANOV, N.I., inzh.; KRASNOV, V.Ya.; NAUMOV, G.A.; POTAPENKO, B.T.

Sinking large hollow shore protection units in running water.
Gidr.stroi. 31 no.5:30-31 My '61. (MIRA 14:6)
(Shore protection) (Precast concrete construction)

NAUMOV, G.A., inzh.; POTAPENKO, B.T. [deceased]; GAGANOV, N.I.; KRASOV, V.Ya.

Assembly of large hollow shore protection units on slips. Gidr. stroi. 34 no.11:6-9 N '63. (MIRA 17:3)



Determination of iron and titanium in silicates. C. V. POTAPENKO. *Keramika i Steklo* 6, 29–31(1930).—A method of analyzing silicates is described whereby the melt obtained by fusion with alkali carbonate can be dissolved without sepn. of SiO_2. If the resulting soln. from a latter $K_2S_2O_7$ fusion is boiled, H_2TiO_3 is converted to Ti^{++++} and results are better in the colorimetric detn. of Ti. A quantity of alkali sulfate equiv. to that in the analyzed soln. should be added to the standard. A slight lowering of the titration results for Fe are said to be caused by Al but this error is less than 2% if 10% H_2SO_4 is present. M. V. KONDOIDY

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

POTAPENKO, D.

Portable saw frame. Muk.-elev.prom. 22 no.10:27-28 O '56.
(MLRA 9:12)

1. Krasnodarskaya kontora Zagotzerno.
(Saws)

SUN' PAN'-SHOY [Sun P'an-shou]; LI VÊN'-YAN' [Li Wen-yen]; LI MU-CHZHEN' [Li Mu-chên]; LYATOKHO, V.P. [translator]; KOTOV, A.V.[translator]; BOGDANOV, G.A.[translator; POTAPENKO, F.I.[translator]; SUN' TSZIN-CHZHI [Sun Ching-chih], otv. red. kitayskogo izdaniya; MIKHAYLOV, A.F., otv. red.; KHAR'KOVSKAYA, L.M., tekhn. red.

[Central China] TSentral'nyi Kitai. Otv. red. kitaiskogo izd. Sun Ching-chih. Moskva, Izd-vo inostr. lit-ry, 1961. 436 p.
(MIRA 14:10)

(China--Economic geography)

GUBIN, N.I.; ZAGAYEVSKIY, Ya.L.; KAZAKOV, L.M.; LEVKOV, A.I.; LEVCHENKO, A.I.; MAL'CHENKO, E.Ya.; KAZAKOV, L.M.; POTAPENKO, G.D.

Overall mechanization and automation of mines in the Tula-ugol' Combine. Ugol' 40 no.2:1-5 F '65. (MIRA 18:4)

1. Shakhta No.38 tresta Novomoskovskugol' (for Gubin). 2. Trest Krasnoarmeyskugol' (for Zagayevskiy). 3. Kombinat Tulaugol' (for Kazakov). 4. Shakhta No.2 "Bibikovskaya" tresta Uzlovskugol' (for Levkov). 5. Shakhta No.13 tresta Shchekinugol' (for Levchenko). 6. Shakhta No.2 "Zubovskaya" tresta Krasnoarmeyskugol' (for Mal'chenko). 7. Trest Novomoskovskugol' (for Potapenko).

POTAPENKO, G.I., prof.

Materials on the history of botany at Odessa University; from recollections. Trudy Inst. ist. est. i tekh. 41:44-62 '61. (MIRA 15:2)

1. Odesskiy universitet.
(Odessa—Botanical research)

POTAPENKO, G. V., Cand Med Sci -- (diss) "Nerves of the Human Foot (Macro-Microscopic and Microscopic Study)." Kursk, 1957. 15 pp (Min of Health RSFSR, Voronezh State Med Inst), 200 copies (KL, 51-57, 94)

S

Country : USSR
Category: Human and Animal Morphology (Normal and Pathological). Nervous System. Peripheral Nervous System.

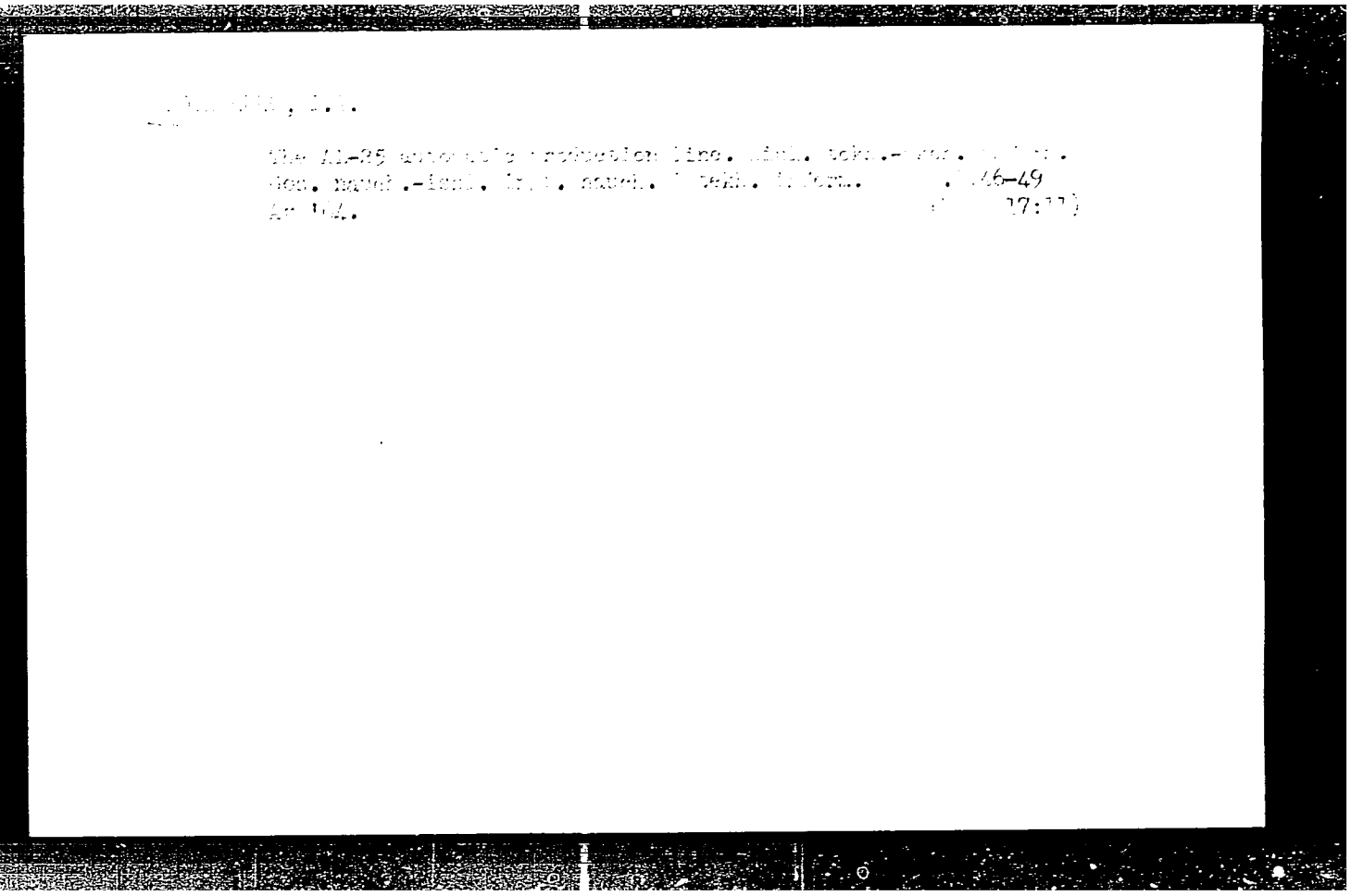
Abs Jour: RZhBiol., No 2, 1959, No 7549

Author : Potapenko, G.V.
Inst : Kursk Medical Institute
Title : Some Regularities of Innervation and Intraorganic Distribution of Nerve Elements in the Foot Muscles (Macro-Microscop. and Microscop. Investigation).

Orig Pub: Sb. tr. Kurskay med. in-t, 1956, vyp. 11, 91-97

Abstract: The muscles (M) of the foot are innervated by branches of internal and external plantar and deep peroneal nerves. Into each muscle enters one small trunk from the nerve which innervates it. Into M

Card : 1/3



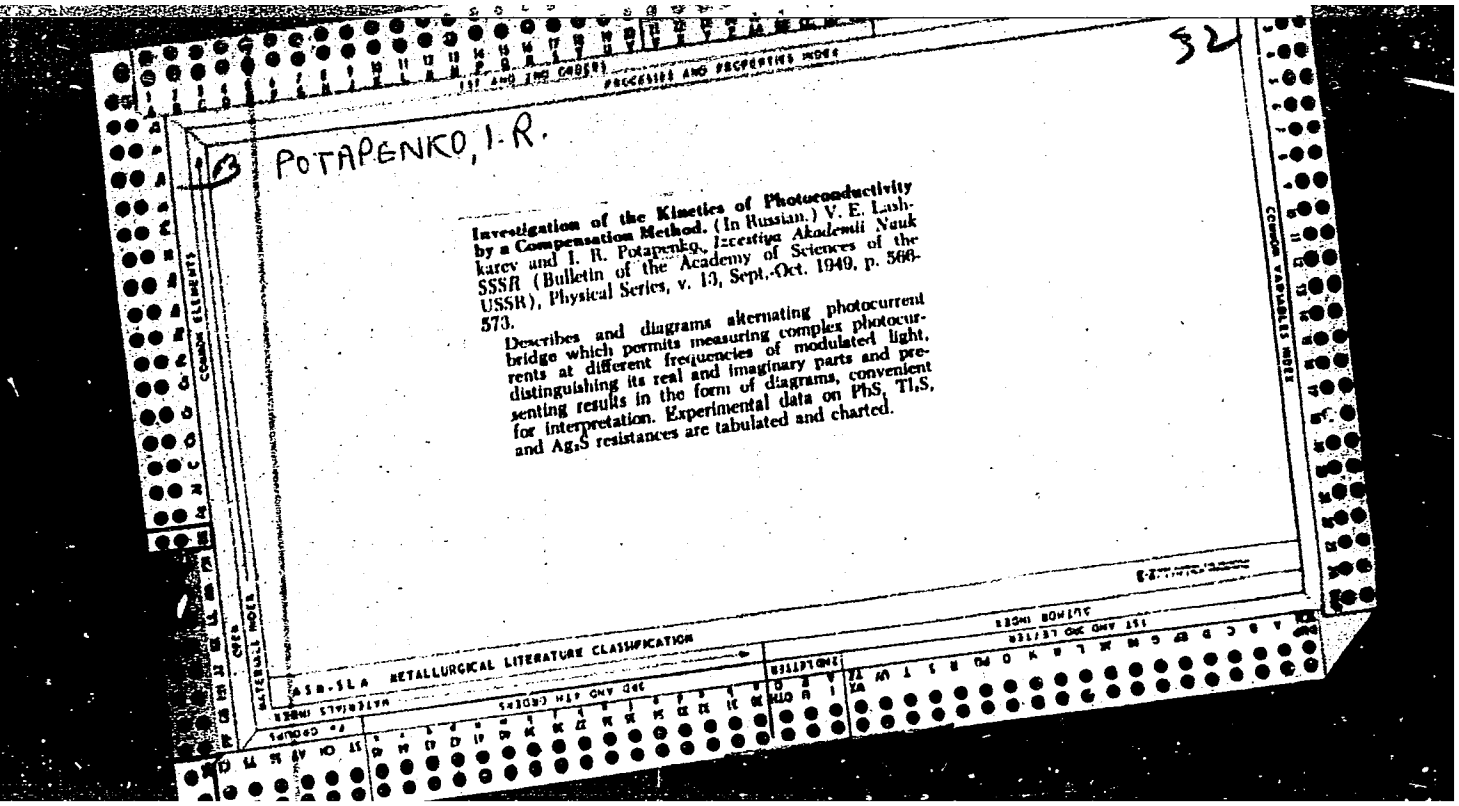
CA POTAPENKO, I. R.

Structure and particularities of the operation of silver sulfide photocells. I. R. Potapenko (Phys. Inst., Acad. Sci. Ukr. S.S.R., Kiev). Zhur. Tekh. Fiz. 18, 1355-66(1948).—If normal rectification is defined as one in which the transmitting direction corresponds to a motion of the carriers of elec. current from the interior of the semiconductor into the blocking layer, the electronic (neg.-type) semiconductor AgS should transmit with the pos. pole applied to the external electrode. Actually the transmitting direction in AgS is opposite to that expected on the basis of its type of semicond., i.e. its rectification is anomalous. This is illustrated by a representative AgS cell (2 sq. cm., photocurrent I_0 = 6000 microamp./lumen) which shows a change of the dark resistance r, R_0 (where R_0 = dark resistance at an applied voltage V = 0) as a function of V of the same sign as a Se photocell (11 sq. cm., E = 138 mv., I_0 = 600 microamp./-lumen, at 25 lux), although Se is a pos. (hole)-type semiconductor. Also, for AgS, R/R_0 passes through a max. (~2) at 85 mv., and falls to 1/2 at −50 mv., the rectification is much greater than for Se. In short-circuited AgS, in contrast to Se, R does not change on illumination; this indicates absence of a photoeffect in the blocking layer. Diagrams of R_0 (the imaginary part of the complex resistance) as a function of R_0 (its real part), obtained by measurements with an a.-c. bridge, at applied voltage V = 0, +15, and −15 mv., at low frequencies up to 40-50 hertzes, are semicircles characteristic of a sharply delineated layer of high sp. resistivity; at V = 0, the diagrams give R = 1060 ohm, τ(= $1/\omega_m$, where ω_m = circular frequency corresponding to the max. of R_0) = 5.3 × 10^{-5} sec., and a capacity of 25 microfarads/sq. cm. The latter figure, with a dielec. const. ϵ, and on the assumption of a smooth surface, gives for the order of magnitude of the thickness of the surface layer l = 3 × 10^{-4} cm. This contrasts with the Se cell, for which an analogous detn. gives l = 1.1 × 10^{-6} cm. Consequently, in AgS, the blocking layer is of a nature radically different from that of Se and other photocells; it appears to be a monoat. layer of some adsorbed matter. That, in addn. to this particular monoat. layer, there may also exist in AgS a blocking layer of the common type, is

over

suggested by the deviation of the R_0, R_ω diagram from a semicircle at high ω. At an applied $V = +15$ mv., R increases to 1550, and at $V = -15$ mv., R decreases to 550 ohm, as compared with $R = 1060$ at $V = 0$. In the short-circuited Ag_2S cell, illumination does not change R of the blocking layer, but in open circuit (detn. of the photo-e.m.f.) illumination increases R and τ (from 5.3×10^{-5} to 8.0×10^{-5} sec.) as a result of the voltage set up by the light. On illumination, the top electrode is charged positively, as expected for an electronic conductor; this sign of E corresponds to the blocking direction. R increases with the illumination up to a max., then decreases. The radically different behavior of Se shows that, in Se and in contrast to Ag_2S, the blocking layer possesses marked photocond. In short-circuited Ag_2S, the current flowing through the blocking layer is due entirely to holes produced by the light, and consequently R does not change; in open circuit, the electronic current flows entirely through the blocking layer, and remains equal to the short-circuit photocurrent. This scheme is confirmed by the near-coincidence of the curve of photo-E as a function of the photo-I_0 (through variation of the illumination) and the curve of the dark current as a function of the applied V; in Se, where R of the blocking layer decreases on illumination, there can be no such coincidence with the dark characteristic. Diagrams of the imaginary (E_v) as a function of the real (E_r) part of the complex photo-e.m.f., obtained with the aid of a differential light modulator, are regular semicircles with deviations only at higher frequencies of 150–200. For the imaginary part (I_v) as a function of the real part (I_r) of the complex photocurrent, the high-frequency deviations are more marked. The E_v, E_r diagram indicates the presence of an addnl. blocking layer of small τ, doubtlessly located below the outer at. blocking layer, and active in the production of the photo-e.m.f. The deviations of the I_v, I_r diagram indicate, moreover, a reactive resistance, apparently located under the bottom electrode, and with no connection with the mechanism of the photo-e.m.f., but appearing only under a current. Curves of E and of I as functions of the frequency ν show sharp fall with increasing ν; the fall E from $\nu = 0$ and $\nu = 2000$ hertzes is by a factor of about 350, whereas if the at. layer alone were responsible for the photo-e.m.f., one should expect a fall by a factor of 1100; this is added proof of the existence of an addnl. blocking layer. The amplitude of I falls with increasing ν more slowly. The at. blocking layer is characterized by a long $\tau \sim 0.1$ sec. The absence of photocond. in that layer is easily explained by its thinness, and its penetrability to carriers through tunneling. Ag_2S is the only photocell thus far known in which the sign of the photo-e.m.f. corresponds to the blocking direction.

N. Thon



POTAPENKO, I. R.

Investigation of the Kinetics of Photoconductivity by a Compensation Method. (In Russian.) V. E. Lashkarev and I. R. Potapenko, *Izvestiya Akademii Nauk SSSR* (Bulletin of the Academy of Sciences of the USSR), Physical Series, v. 13, Sept.-Oct. 1949, p. 566-573.

Describes and diagrams alternating photocurrent bridge which permits measuring complex photocurrents at different frequencies of modulated light, distinguishing its real and imaginary parts and presenting results in the form of diagrams, convenient for interpretation. Experimental data on PbS, Tl$_2$S, and Ag$_2$S resistances are tabulated and charted.

CA POTAPENKO, I. R.

Nonlinear photoconductivity of lead sulfide photoresistors. V. E. Lashkarev, I. R. Potapenko, and G. A. Fedorus. *Zhur. Eksptl. Teoret. Fiz.* 19, 887-98(1949).—(1) Exptl. detns. with the purpose of establishing the dependence of α and q on L and J (cf. preceding abstr.) were made at different illuminations and temps. between +20 and −100°. Samples of PbS differed in τ, from 2.8×10^{-6} to 18×10^{-6} sec. at room temp. By the single-impulse method and successful coincidence of the ln J/time curves at $L = 1.0, 0.44$, and 0.24 (in relative units), q in the dark is a function of J. In PbS, if the photocond. is of the defect type, the probability of recombination is proportional to the no. of collisions between trapped electrons and free holes. (2) Ordinary PbS, obtained by fusion, has a substantially higher cond., which shows some features of metallic cond., specifically a temp.-independent carrier concn. component. This is absent in the typically semiconducting PbS photoresistor. N. Thon

POTAPENKO, M.D.

Shortcomings in the accounting, control and standardization of sugar losses in production. Sakh.prom. 29 no.1:21 '55. (MIRA 8:4)

1. Yaltushkovskiy sakharnyy zavod.
(Sugar industry)

A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber.

other instrument of the Poisson type was developed for the measurements of internal pressures (Fig. 3). A further description of the instrument and the method used for the experiments is given. The internal pressure was calculated by the formula:

$$P_{int.} = \frac{K_{con.} - (P_{start.} + \Delta P)}{S_r} \cdot S_p,$$

since the principle of the instrument is based on the compensation of the internal pressure of the rubber by means of a pressing unit. $K_{con.}$ is the pressure after the heating of the rubber, $P_{start.}$ is the starting pressure 5 kg/cm^2, ΔP the correction of the thermal expansion of the instrument parts and the press, S_r - the area of the cross-section of the rubber sample (usually 4.52 cm^2), S_p - the area of the cross-section of the press plunger (254.34 cm^2). The change in the volume of the rubber mixtures during the heating and vulcanizing process, as well as the change in the internal pressure during those processes are further discussed. The conditions for reducing the amount of vulcanized rubber waste were sought and it is stated that these might be accomplished by the use of a sealed mold of the

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A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber

Poisson type in the rolling process. It was found that the amount of rubber waste depended on the type of mold used, the weight of the raw material, calibre, etc. The internal pressure of rubbers, vulcanized in the hermetically-sealed Poisson-type molds reaches high values and exceeds the external pressures used in industry by 10 to 20 times. Due to the fact that the internal pressure in these molds is always greater than the external pressure, a qualitative molding and vulcanization of the rubbers can be accomplished, the excess usage of rubber from raw semi-finished articles can be brought to a minimum, as well as that of the vulcanized waste products, and it can also eliminate certain types of waste products. In this case light-weight and low-energy equipment can be utilized. An external pressure of 10 - 12 kg/cm^2 is sufficient for the initial molding of the rubber article, which determines the necessary power of the equipment. The subsequent molding would be ensured by the constant presence of the internal pressure, which is greater than the external one during the vulcanization of the rubber. The amount of the rubber in the hermetically-sealed mold remains constant, and the volume changes slightly according to the temperature and pressure. It is emphasized that the findings of

Card 3/4

A Study of the Internal Pressures During the Molding and Vulcanization Processes of Rubber

these tests render the use of heavy equipment and high pressures unnecessary, in addition to serving as a basis for the vulcanization of rubber products in closed molds outside the vulcanization process. The use of hermetically-sealed Poisson-type molds for general use in the manufacturing of molded rubber articles is recommended. There are 4 diagrams, 6 graphs, 2 tables and 5 Soviet references.

ASSOCIATION: Leningradskiy Tekhnologicheskiy institut im. Lensoveta i Leningradskaya fabrika "Skorokhod" (Leningrad Technology Institute im. Lensovet and the Leningrad Plant "Skorokhod")

Card 4/4

OKHRIMENKO, I.S., BELEN'KIY, I.A., POTAPENKO, M.N., VEYNBERG, I.A.

Study of internal pressures in the process of molding and vulcanization of rubbers. Kauch.i rez. 19 no.7:39-44 Jl '60.
(MIRA 13:7)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta i Leningradskaya fabrika "Skorokhod".
(Vulcanization)

SOKOL, P.F., doktor sel'skokhoz. nauk; POTAPENKO, M.T., kand. sel'skokhoz. nauk

Growing seed potatoes in the forest-steppe and Polesye of the Ukraine. Agrobiologiia no.3:374-377 My-Je '65.

(MIRA 18:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut ovoshchevodstva i kartofelya, Khar'kov.

UKOKIN, I.; POTAPENKO, P.; FOROSTETSKIY, L.; KARPILENKO, M.

Graduation projects of students should have a realistic basis. Mast. ugl. 9 no.2:14 F '60. (MIRA 13:7)

1. Predsedateli predmetnykh komissiy Kopeyskogo gornogo tekhnikuma Chelyabinskogo sovnarkhoza (for Ukolkin, Potapenko). 2. Direktor L'vovskogo gornogo tekhnikuma (for Forostetskiy). 3. Zaveduyushchiy kabinetom diplomirovaniya Gorlovskogo gornogo tekhnikuma (for Karpilenko).

(Mining engineering--Study and teaching)

POTAPENKO, P.Z., veterinarnyy vrach.

Use of heterogenic donors' blood in gastroenteritis and bronchopneumonias in calves and young pigs. Trudy NIVI 1:245-248 '60. (MIRA 15:10)

(Pneumonia) (Blood as food or medicine) (Gastroenteritis)

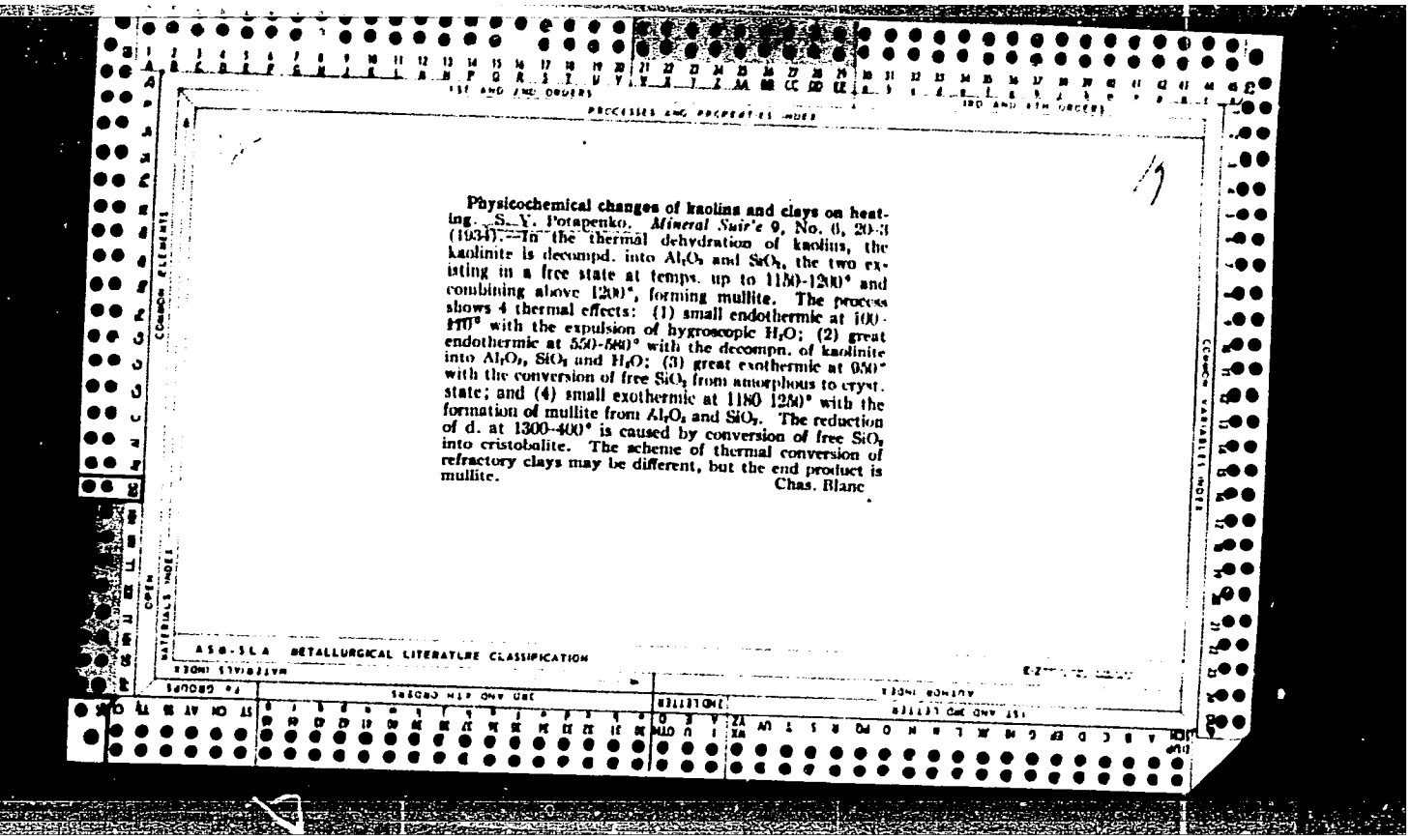
SVIRIDOV, V.V. [Svirydau, V.V.]; TARAYKOVSKAYA, G.I. [Taraikouskaia, H.I.]; POTAPENKO, P.M. [Patapenka, R.M.]

Formation of cobalt ferrite from coprecipitated cobalt and iron hydroxides. Vestsi AN BSSR.Ser.khim.nav. no.2:52-60 '65.
(MIRA 18:12)

POTAPENKO, S. K.

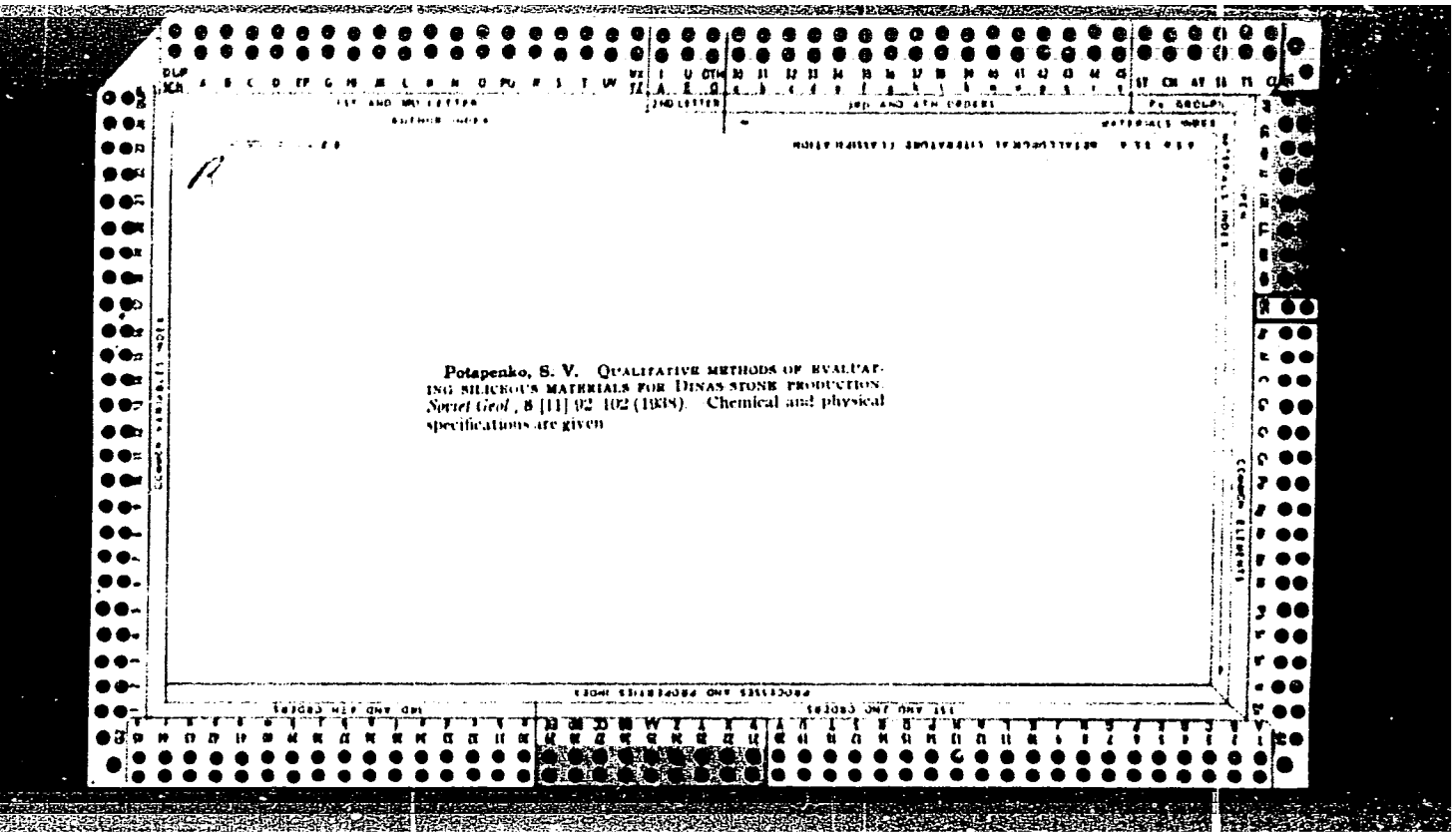
37451. Kolkhoz "zhovten'" Podgotovilsya k zimovke skota. /Kobelya k. rayon Po
obl/ Sots. zhivotnovodstvo, 1949, No. 8, s. 81-84.

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

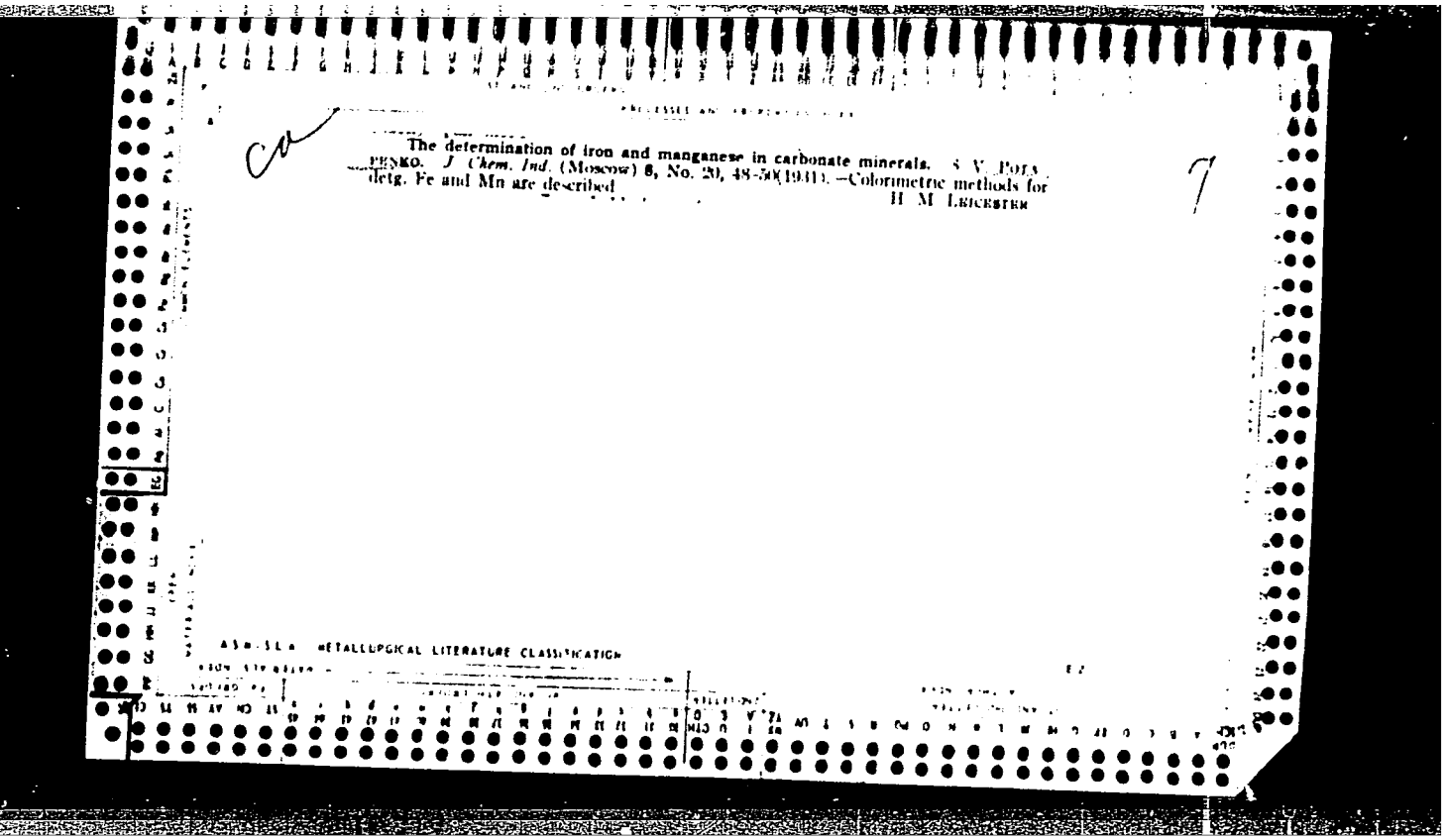


Physicochemical changes of kaolins and clays on heating. S. Y. Potapenko. *Mineral Sur'e* 9, No. 6, 20-3 (1934).—In the thermal dehydration of kaolins, the kaolinite is decompd. into Al_2O_3 and SiO_2, the two existing in a free state at temps. up to 1150-1200° and combining above 1200°, forming mullite. The process shows 4 thermal effects: (1) small endothermic at 100-110° with the expulsion of hygroscopic H_2O; (2) great endothermic at 550-580° with the decompn. of kaolinite into Al_2O_3, SiO_2 and H_2O; (3) great exothermic at 950° with the conversion of free SiO_2 from amorphous to cryst. state; and (4) small exothermic at 1180-1280° with the formation of mullite from Al_2O_3 and SiO_2. The reduction of d. at 1300-400° is caused by conversion of free SiO_2 into cristobalite. The scheme of thermal conversion of refractory clays may be different, but the end product is mullite.

Chas. Blanc



Potapenko, S. V. Qualitative methods of evaluating siliceous materials for Dinas stone production. *Soviet Geol.*, 8 [11] 92–102 (1938). Chemical and physical specifications are given



The determination of iron and manganese in carbonate minerals. S. V. POLYAKO. *J. Chem. Ind.* (Moscow) 8, No. 20, 48-50(1931).—Colorimetric methods for detg. Fe and Mn are described.
H. M. LEICESTER

7

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

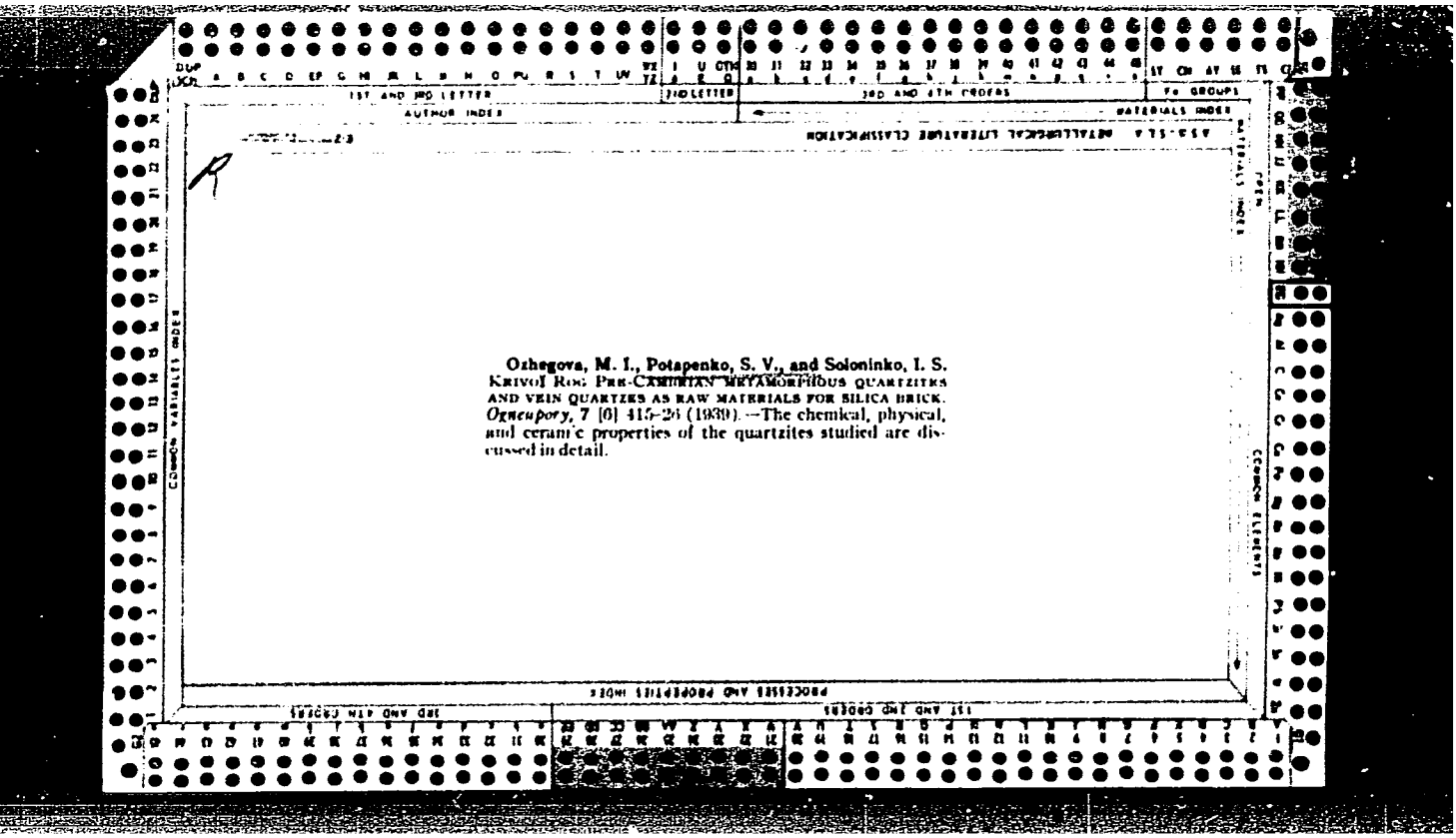
PROCESSES AND PROPERTIES INDEX

BC

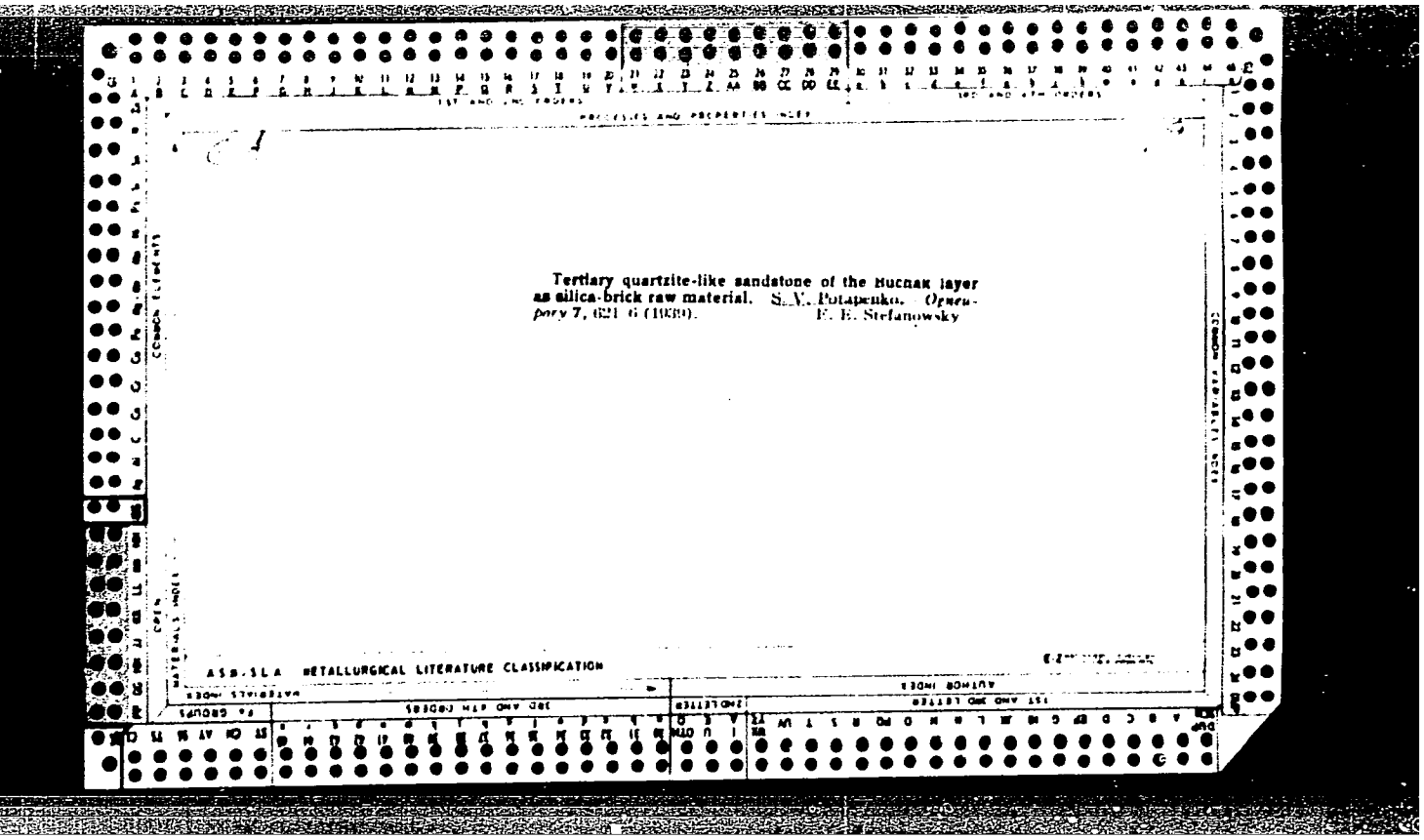
BI8

Thermal decomposition of limestone, dolomites, and magnesites. S. V. P[illegible] (J. Appl. Chem., Russia, 1932, 5, [illegible]—704).—Temp. of incipient and complete decomp. in dry air (1 hr.) are, respectively, limestone 600°, 800°; dolomite [illegible]°, 800°; magnesite 400°, 600°; and in dry CO_2 (1 hr.) 880°, 900—925°; $MgCO_3$ of dolomite 725°. CH. ABS.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

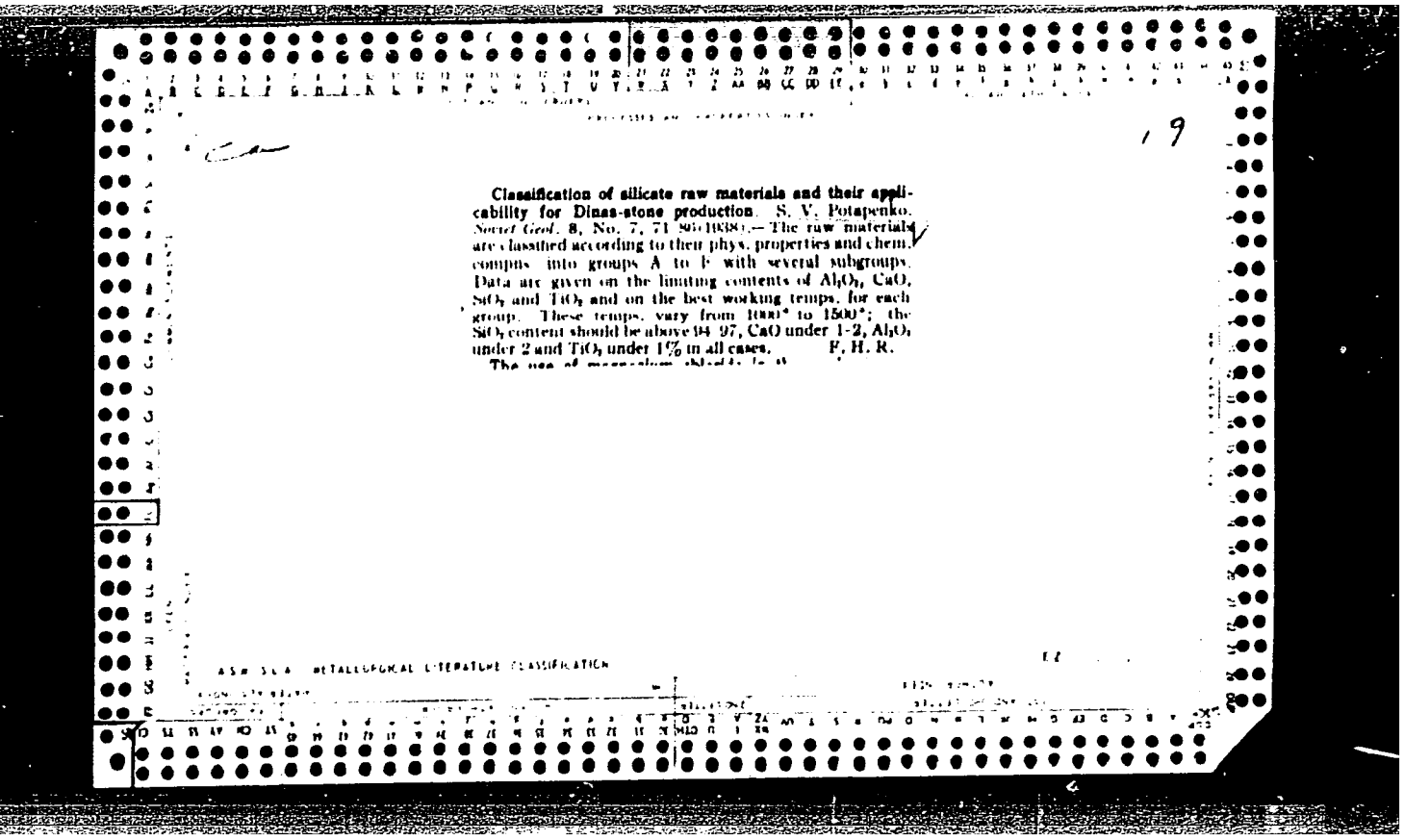


Ozhegova, M. I., Potapenko, S. V., and Soloninko, I. S. KRIVOI ROG PRE-CAMBRIAN METAMORPHOUS QUARTZITES AND VEIN QUARTZES AS RAW MATERIALS FOR SILICA BRICK. *Ogneupory*, 7 [6] 415–26 (1939).—The chemical, physical, and ceramic properties of the quartzites studied are discussed in detail.



Tertiary quartzite-like sandstone of the Hucnak layer as silica-brick raw material. S. V. Potapenko. *Ogneupory* 7, 621–6 (1989). F. E. Stefanowsky

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



19

Classification of silicate raw materials and their applicability for Dinas-stone production. S. V. Potapenko. *Soviet Geol.* 8, No. 7, 71–95 (1938).—The raw materials are classified according to their phys. properties and chem. comps. into groups A to F with several subgroups. Data are given on the limiting contents of Al_2O_3, CaO, SiO_2 and TiO_2 and on the best working temps. for each group. These temps. vary from 1000° to 1500°; the SiO_2 content should be above 94–97, CaO under 1–2, Al_2O_3 under 2 and TiO_2 under 1% in all cases. P. H. R.

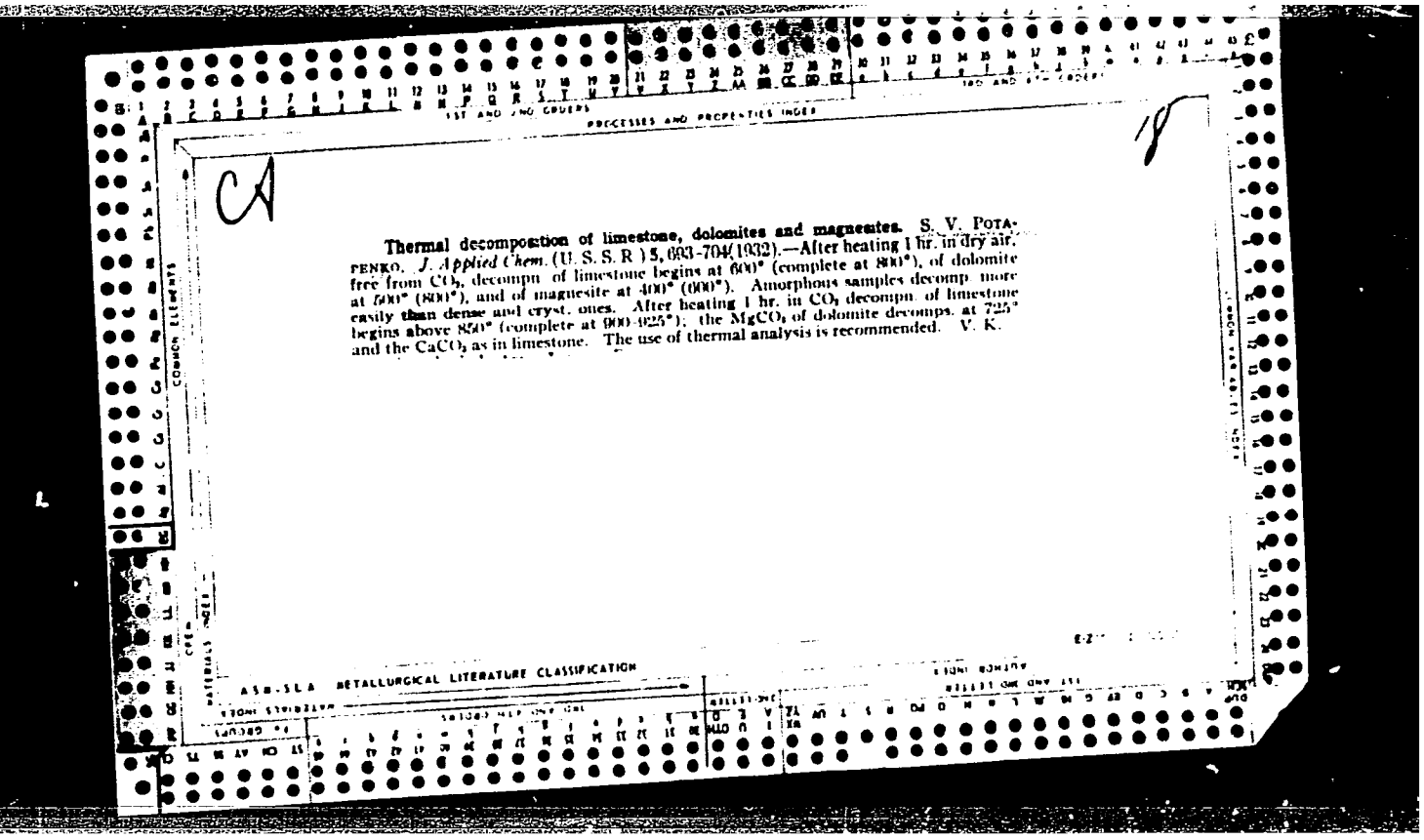
The use of magnesium [illegible]

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Qualitative methods of evaluating siliceous materials for Dinas stone production S. V. Potapenko. *Novei Geol* 8, No. 11, 92-102(1938); cf. C. A. 33, 4392. Chem. and phys. specifications are given. F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

18

Thermal decomposition of limestone, dolomites and magnesites. S. V. POTAPENKO. *J. Applied Chem.* (U. S. S. R.) 5, 693-704(1932).—After heating 1 hr. in dry air, free from CO_2, decompn. of limestone begins at 600° (complete at 800°), of dolomite at 500° (800°), and of magnesite at 400° (600°). Amorphous samples decomp. more easily than dense and cryst. ones. After heating 1 hr. in CO_2 decompn. of limestone begins above 850° (complete at 900-925°); the $MgCO_3$ of dolomite decomps. at 725° and the $CaCO_3$ as in limestone. The use of thermal analysis is recommended. V. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

POTAPENKO, S.V.; VEYKHER, A.A.; SEMILETKOVA, Ye.K., red.izd-va; SHMAKOVA, T.M., tekhn. red.

[Industry's requirements as to the quality of mineral raw materials]Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Moskva, Gosgeoltekhizdat. No.54.[Clays and kaolin]Gliny i kaolin. Izd.2., perer. 1962. 94 p. (MIRA 16:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institu mineral'nogo syr'ya.
(Clay) (Kaolin)

POZHARENKO, S. V.

Thermographic characteristics of minerals of the Ukrainian S.S.R. S. V. POZHARENKO. *Ukrain. Khim. Zhur.*, 19 [1] 103-11 (1953).—Various clays, clay formations, and rocks were subjected to differential thermal analysis with the use of a three-point self-recording potentiometer which recorded both the heating and differential curves. Twenty-three thermograms of various minerals are shown. B.Z.K.

POTAPENKO, S.V.

USSR

Chemical and mineralogical composition of Ukrainian clays for construction purposes. S. V. Potapenko. *Dokl. Akad. Nauk S.S.S.R.* 90, 257–9(1953).—Most of the clays of the Don Basin and of the Kiev area are derived from loams and loess (Quaternary aeolian) sediments. The microscopic, x-ray, and differential-thermal examn. shows that they differ greatly from the typical kaolins, refractory clays, and bentonites of S. Russia. The 14 analyses given show Fe_2O_3 contents varying between 7 and 9%, MgO between 2 and 5%, R_2O between 1 and 5%, the ratio $SiO_2/(R_2O_3 + RO)$ varying between 3.0 and 3.6. The ds. are 2.68 to 2.72 and the *n*s vary between 1.535 and 1.555. The clays are only weakly stained by the benzidine test.

W. Eitel

POTAPENKO, S. V.

Gliny i glinistye porody ukrainskoi SSR. [Clays and clay rocks of the Ukrainian S.S.R.]
Kiev, Izd-vo Akad-arkh. ukr. SSR, 1952. 268 p.

SO: Monthly List of Russian Accessions, Vol. 6, No. 5, August 1953

POTAPENKO, Stepan Vasil'yevich; KORSAKEVICH, O., red.; IOAKIMIS, A., tekhn.red.

[Keramzit] Keramzyt. Kyiv, Derzh.vyd-vo lit-ry z budivnytstva i arkhit.URSR, 1959. 125 p. (MIRA 13:6)
(Building materials)

POTAPENKO, S.V.

Thermographic behavior of mineral resources of the Ukrainian S.S.R.
Ukr.khim.zhur. 19 no.1:103-111 '53. (MLRA 7:4)
(Thermal analysis)(Ukraine--Mineralogy)

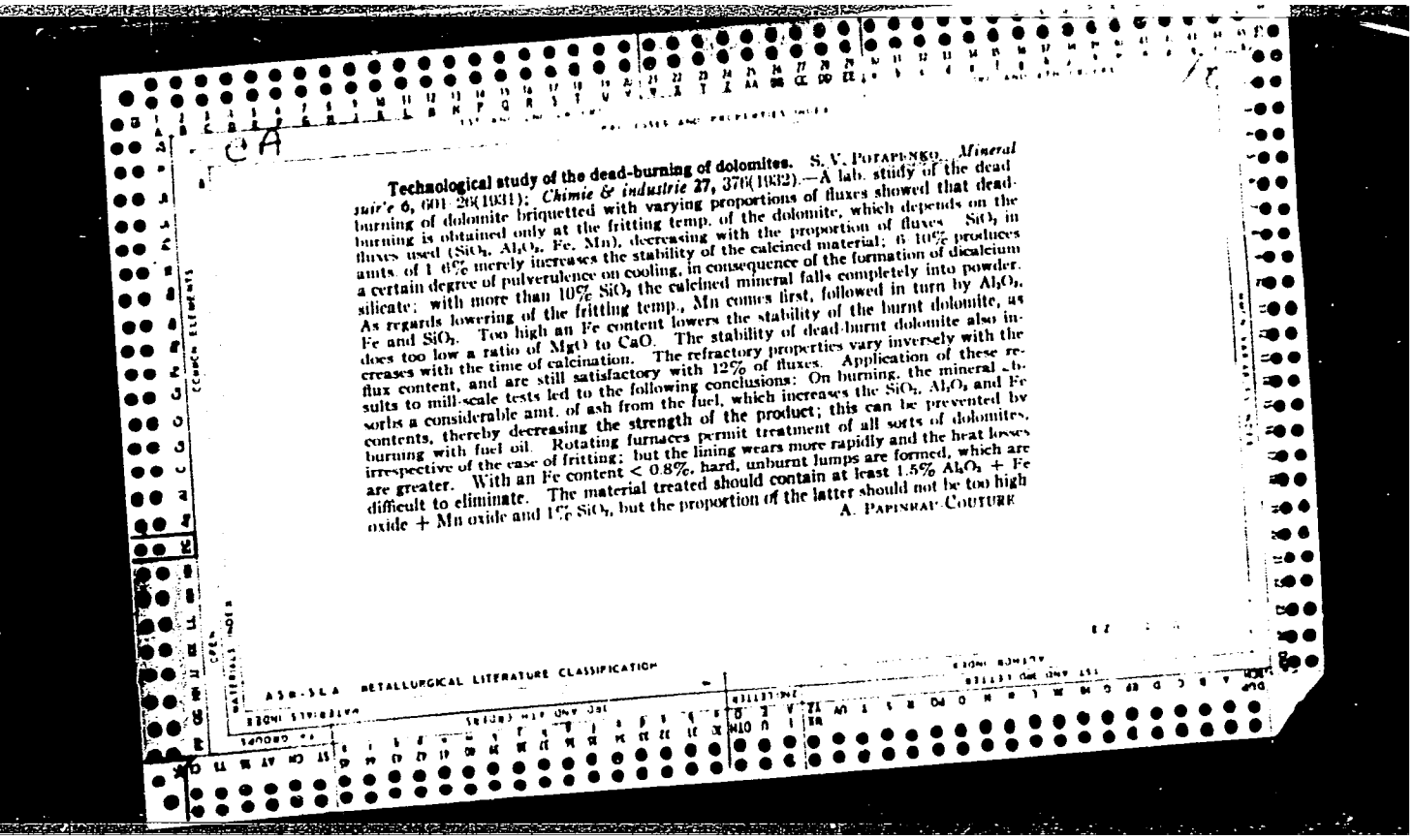
1. POTAPENKO, S.V.

2. USSR (600)

4. Clay - Ukraine

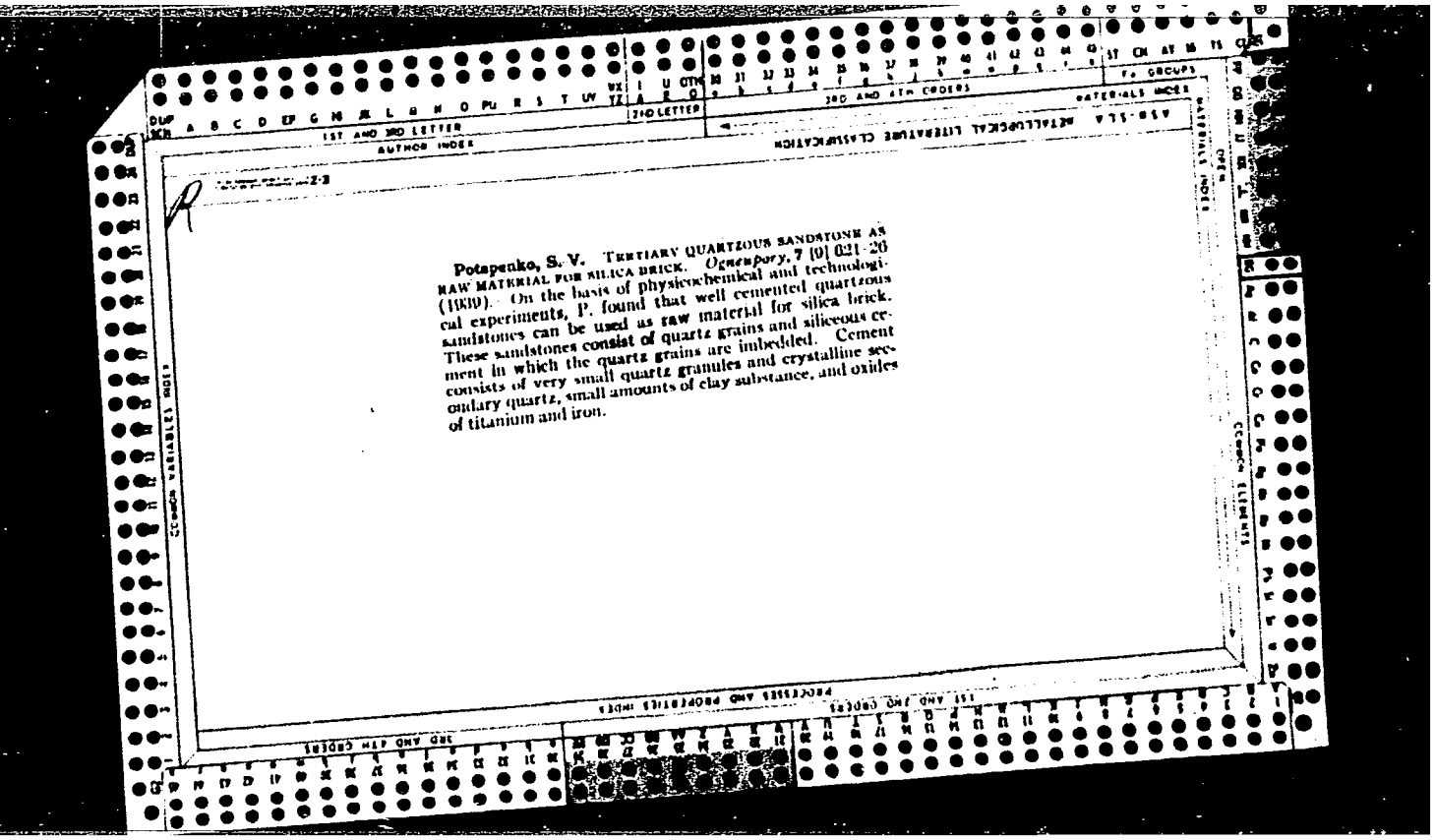
7. Chemical and mineralogical composition of clayey substance in certain construc-tional clays of the Ukrainian S.S.R., Dokl. AN SSSR 90 no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

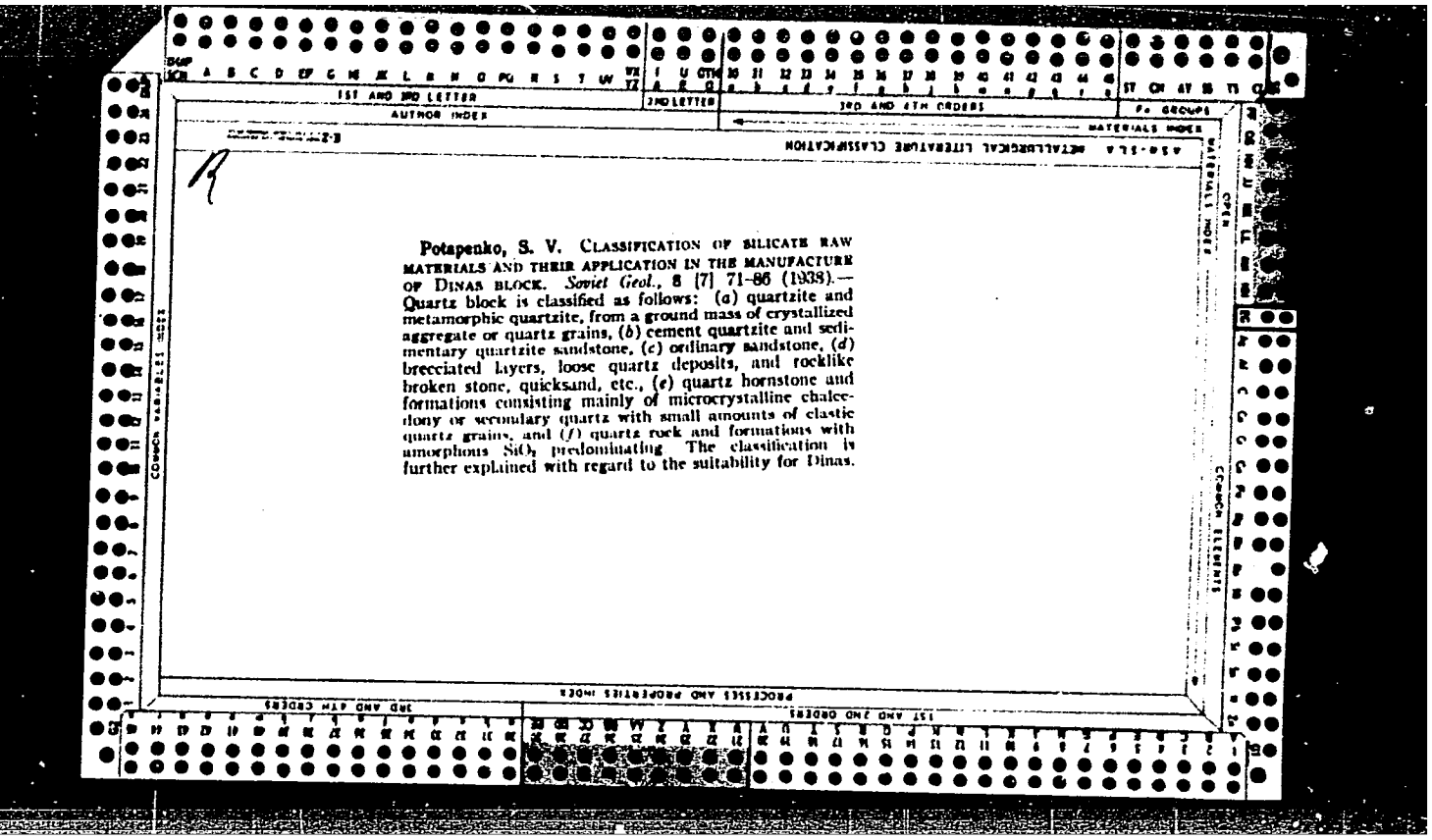


Technological study of the dead-burning of dolomites. S. V. POTAPENKO. *Mineral suir'e* 6, 601–28(1931); *Chimie & industrie* 27, 370(1932).—A lab. study of the dead-burning of dolomite briquetted with varying proportions of fluxes showed that dead-burning is obtained only at the fritting temp. of the dolomite, which depends on the fluxes used (SiO_2, Al_2O_3, Fe, Mn), decreasing with the proportion of fluxes. SiO_2 in amts. of 1–6% merely increases the stability of the calcined material; 6–10% produces a certain degree of pulverulence on cooling, in consequence of the formation of dicalcium silicate; with more than 10% SiO_2 the calcined mineral falls completely into powder. As regards lowering of the fritting temp., Mn comes first, followed in turn by Al_2O_3, Fe and SiO_2. Too high an Fe content lowers the stability of the burnt dolomite, as does too low a ratio of MgO to CaO. The stability of dead-burnt dolomite also increases with the time of calcination. The refractory properties vary inversely with the flux content, and are still satisfactory with 12% of fluxes. Application of these results to mill-scale tests led to the following conclusions: On burning, the mineral absorbs a considerable amt. of ash from the fuel, which increases the SiO_2, Al_2O_3 and Fe contents, thereby decreasing the strength of the product; this can be prevented by burning with fuel oil. Rotating furnaces permit treatment of all sorts of dolomites, irrespective of the ease of fritting; but the lining wears more rapidly and the heat losses are greater. With an Fe content < 0.8%, hard, unburnt lumps are formed, which are difficult to eliminate. The material treated should contain at least 1.5% Al_2O_3 + Fe oxide + Mn oxide and 1% SiO_2, but the proportion of the latter should not be too high.

A. PAPINEAU-COUTURE



Potapenko, S. V. TERTIARY QUARTZOUS SANDSTONE AS RAW MATERIAL FOR SILICA BRICK. *Ogneupory*, 7 [9] 021-20 (1939). On the basis of physicochemical and technological experiments, P. found that well cemented quartzous sandstones can be used as raw material for silica brick. These sandstones consist of quartz grains and siliceous cement in which the quartz grains are imbedded. Cement consists of very small quartz granules and crystalline secondary quartz, small amounts of clay substance, and oxides of titanium and iron.



Potapenko, S. V. CLASSIFICATION OF SILICATE RAW MATERIALS AND THEIR APPLICATION IN THE MANUFACTURE OF DINAS BLOCK. *Soviet Geol.*, 8 [7] 71–86 (1938).—Quartz block is classified as follows: (*a*) quartzite and metamorphic quartzite, from a ground mass of crystallized aggregate or quartz grains, (*b*) cement quartzite and sedimentary quartzite sandstone, (*c*) ordinary sandstone, (*d*) brecciated layers, loose quartz deposits, and rocklike broken stone, quicksand, etc., (*e*) quartz hornstone and formations consisting mainly of microcrystalline chalcedony or secondary quartz with small amounts of clastic quartz grains, and (*f*) quartz rock and formations with amorphous SiO_2 predominating. The classification is further explained with regard to the suitability for Dinas.

L 43927-65 EWT(m)/EPF(c)/T Pr-4 WE

ACCESSION NR: AT5008624 S/2933/64/007/000/0047/0057

AUTHORS: Rachinskiy, F. Yu.; Bol'shakov, G. F.; Bruk, Yu. A.; Kremen', M. Z.; Pavlova, L. V.; Potaponko, T. G.; Slavachevskaya, N. M.

TITLE: Synthesis and antioxidant properties of sulfur- and nitrogen-bearing Ionol derivatives

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh, v. 7, 1964, 47-57

TOPIC TAGS: antioxidant, sulfur, nitrogen, thermooxidation/ Ionol

ABSTRACT: The retardation of oxidative degradation of hydrocarbon fuels, polyolefins, fats, and many synthetic and derived products was studied. In the present work the authors have synthesized and studied the antioxidant properties of a number of Ionol structural analogs, including azomethynes, hydrazones, amines, sulfides, and disulfides. The properties and compositions of these products are tabulated in the article. The treatment of Ionol with bromine and the condensation of 3,5-di-tert-butyl-4-oxybensyl bromide with primary, secondary, and tertiary amines takes place with the formation of intermediate compounds of 2,6-

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L 43927-65

ACCESSION NR: AT5008624

di-tert-butyl-4-methylene quinone. Synthetic nitrogen- and sulfur-bearing structural analogs of Ionol are able to retard oxidation reactions not only during degeneration but during development. This results from a capacity to react with the primary radicals of the oxidized substance and also from a capacity to decompose the peroxide and to bind metallic ions of variable valence. Many of the synthesized substances cause effective retardation of thermooxidation of polyolefins and fats, inhibit radiation-chemical oxidation of fats, and some become effective additives for increasing the thermooxidizing stability of jet fuels. Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: OC, FP

NO REF SOV: 008 OTHER: 010

Card 2/2

L 41617-65 EWG(j)/EWT(m) GS
ACCESSION NR: AT5008048 S/0000/64/000/000/0233/0247 27 B+1

AUTHOR: Rachinskiy, F. Yu.; Kushakovskiy, M. S.; Matveyev, B. V.; Potapenko, T. G.; Slavachevskaya, N. M.; Tank, L. I.; Titov, A. V.; Yampol'skaya, L. I.

TITLE: Comparative evaluation of certain models for the initial selection of radiation protection compounds 19

SOURCE: Patogenez, eksperimental'naya profilaktika i terapiya luchevykh porazheniy (Pathogenesis, experimental prevention, and therapy of radiation injuries); sbornik statey. Moscow, Izd-vo Meditsina, 1964, 233-247

TOPIC TAGS: radiation protection, radiation sickness, aliphatic compound, oxygen compound, methemoglobin

ABSTRACT: Assuming that the antioxidant and reducing properties of radiation protection compounds of bivalent sulfur are related to their ability to decrease the severity of radiation sickness, models using these properties were compared. It was established that not a single model, taken separately, was adequate for a biological method of selecting antiradiation agents; however, the results of tests of

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L 41617-65
ACCESSION NR: AT5000048

substances on several models can serve as an initial test for the selection of active substances. Aliphatic, oxygen, and methemoglobin models most fully reflect the potential radiation protection activity of substances. Orig. art. has: 8 tables.

ASSOCIATION: none

SUBMITTED: 19Aug64 ENCL: 00 SUB CODE: LS,OC

NO REF SOV: 002 OTHER: 023

Card 2/2

KIRILLOVA, E.I.; MATVEYEVA, Ye.N.; POTAPENKO, T.G.; RACHINSKIY, F.Ya.
SLOVACHEVSKAYA, N.M.

Effect of certain organic compounds on the thermal decomposition of polyvinyl butyrals. Plast.massy no.5:15-19 '61. (MIRA 14:4)
(Vinyl compounds)

L 10117-63 EPF(c)/EWT(m)/BDS--AFFTC/APGC--Pr-4--RM/MW/RM/MN/MAY

ACCESSION NR: AP3001314 S/0933/63/005/000/0160/0176

AUTHOR: Bol'shakov, G. F.; Davy*dov, P. I.; Potapenko, T. G.; Rachinskiy, F. Yu.; Slavachevskaya, N. M.

TITLE: Effect of natural and synthetic sulfur- and nitrogen-containing compounds on the thermal oxidative stability of straight-run fuels [Report presented at the Sixth Scientific Session on the Chemistry of Organosulfur Compounds of Crude Oil and Petroleum Products held at Ufa, 27 June - 1 July 1961]

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh, v. 5, 1963, 160-176

TOPIC TAGS: TS-1, T-1, DA, thermal oxidative stability, S and N compounds, resin, Getseu corrosion, sediment, amino sulfides, amino disulfides, amino thiols, amino nitriles, thiazolidines, thiazolines, azomethines, ionol, tetrahydroxy-quinoline, 2-phenyl-2-mercaptobutylamine

ABSTRACT: Mixtures of natural S- and N-containing compounds of a "basic" character, i.e., extractable with 25% H sub 2 SO sub 4, were separated from the

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resinous portions of TS-1, T-1, and DA fuels by a method described by V. V. Getseu (Neftyanoye khozyaystvo, no. 11, 68, 1954). The effect of various amounts of these compounds on the thermal-oxidative stability (TOS) of resin-free fuels at 150C was studied by means of a device designed by the authors. The TOS was evaluated from the corrosion of and amount of sediment on a bronze strip and from the amount of fuel-insoluble sediment. It was shown that mixtures of S- and N-containing compounds improve the TOS of the fuels when used in certain optimum amounts (0.03-0.05% for TS-1, 0.05-0.99% for DA, and 0.02-0.06% for T-1). This improvement was attributed to the ability of certain of these components to inhibit fuel oxidation and to form films on bronze which "protect" the fuel from the catalytic effect of the metal. The effect of individual S- and N-containing compounds on the TOS of fuels was studied by adding to TS-1 fuel 0.05% of one of the synthetic compounds (such as amino sulfides, amino disulfides, amino thiols, amino nitriles, thiazolidines, thiazolines, azomethines, ionol and its derivatives, and tetrahydroxyquinoline and its derivatives). It was shown that most of these compounds lower the TOS of straight-run fuels (with the exception of 2-phenyl-2-mercaptobutylamine, 1,2,3, 4-tetrahydroquinoline, certain ionol derivatives, and a reaction product of phenol and styrene). The results of the study indicate that resins of TS-1, T-1, and DA fuels contain compounds (mainly heterocyclic with thiol, amino,

L 10117-63

ACCESSION NR: AP3001314

and phenyl groups) which, in small amounts, can improve the TOS of fuels. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 28May63 ENCL: 00

SUB CODE: 00 NO REF SOV: 004 OTHER: 002

Cdrd 3/3

L 13370-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3003311 S/0191/63/000/007/0048/0051

68

AUTHORS: Rachinskiy, F. Yu.; Slavachevskaya, N. M.; Potapenko, T. G.; Kremen, M. Z.; Matveyeva, Ye. N.

TITLE: Synthesis and investigation of antioxidative properties of some analogues of ionol(3,5-di-tert-butyl-4-oxitoluene).

SOURCE: Plasticheskiye massy, no. 7, 1963, 48-51

TOPIC TAGS: butyloxitoluene, antioxidant inhibitor, ethylene polymer, propylene polymer, thermooxidation.

ABSTRACT: A number of derivatives of 3,5-di-tert-butyl-4-oxitoluene have been synthesized and tested as possible antioxidant inhibitors. The antioxidant properties of these compounds were evaluated according to their ability to delay the oxidation of bone fat and by their ability to thermostabilize ethylene and propylene co-polymers. It was established that most of the synthesized derivatives, excluding 3,5-di-tert-butyl-4-oxibenzaldehyde and 3,5-di-tert-butyl-4-oxibenzylal-n-phenylenediamine, are effective inhibitors of the thermooxidation destruction processes of bone fat and ethylene and propylene co-polymer. Their activities in most cases exceed the activities of 3,5-di-tert-butyl-4-oxitoluene.

Card 1/2

MATVEYEVA, Ye.N.; RACHINSKIY, F.Yu.; KREMEN', M.Z.; POTAPENKO, T.G.

Aging and stabilization of the ethylene-propylene copolymer. Plast. massy no.2:12-16 '61. (MIRA 14:2)
(Ethylene) (Propene)

89916

S/191/61/000/002/003/012
B118/B203

158102

AUTHORS: Matveyeva, Ye. N., Rachinskiy, F. Yu., Kremen', M. Z., Potapenko, T. G.

TITLE: Aging and stabilization of the copolymer of ethylene with propylene

PERIODICAL: Plasticheskiye massy, no. 2, 1961, 12 - 16

TEXT: The authors studied samples of copolymers of ethylene with propylene of the type СЭП-15 (SEP-15). As compared with low-pressure polyethylene, such a copolymer shows a lower crystallizability, higher elasticity and, compared with high-pressure polyethylene, a higher thermal capacity and stability. There are no publications on aging and stabilization of SEP. Accelerated aging of the copolymer was achieved by rolling at 160°C for 4-6 hr. In this procedure, the authors observed a rapid decrease of the angular tangent of dielectric losses at 10^6 cycles/sec, and of the content of fraction insoluble in boiling xylene. They examined the stabilizing effect of azomethines of the aromatic series with various substituents;

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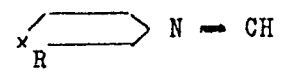
89916

S/191/61/000/002/003/012
B118/B203

Aging and stabilization ....

the azomethines were of the general formula  , where R = OH, NH_2; R' = OH, $N(CH_3)_2$, and were obtained by condensation of o-, p-aminophenols or o-, p-phenylene diamines with benzoic, p-dimethyl-amino benzoic, and salicylic acid aldehydes. When rolling the sample of SEP-15 for 6 hr, the relative elongation was ~4%. The tangent δ at 10^6 cycles/sec grows by the 1.15-fold, with 63% of fraction insoluble in boiling xylene being formed. The o- and p-oxy-anilines first used as stabilizers were only effective for 2 hr of rolling; phenylene diamines proved to be completely inactive. The azomethines obtained by condensation of unsubstituted aniline with benzoic and p-dimethyl-amino benzoic acid aldehyde, and from o- and m-oxy-aniline and benzoic acid aldehyde, showed no stabilizing effect. SEP kept its physicomechanical properties after 6 hr of rolling only in the presence of benzylal-p-oxy-aniline, and dissolved completely in boiling xylene. Among the phenylene diamine derivatives investigated, only benzylal-p-phenylene diamine stabilizes for 2 hr, and p-dimethyl-amino-benzylal-p-phenylene diamine for about 4 hr of rolling. Among the azomethines,

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L 34588-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 RPL JW/RM
ACCESSION NR: AP5008198 S/0286/65/000/005/0070/0070

AUTHORS: Bruk, Yu. A.; Rachinskiy, F. Yu.; Potapenko, T. G.; Matveyeva, Ye. N.; Kremen', M. Z.; Lazareva, N. P.

TITLE: A method for producing stabilizers for vinyl polymers. Class 39, No. 168877

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 70

TOPIC TAGS: vinyl, polymer, stabilization

ABSTRACT: This Author Certificate presents a method for producing stabilizers for vinyl polymers by azomethyne derivatives from aldehydes and phenylenediamines. For obtaining effective and practicable stabilizers, aromatic aldehydes are used, such as benzoin, 2, 6-di-tert-butyl-n-oxybenzoin and others, and, for the phenylenediamine, ortho-, meta-, or paraphenylenediamine are used.

ASSOCIATION: Leningradskiy nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (Leningrad Scientific Research Institute for Polymerization Plastic); Voyenno-meditsinskaya ordena Lenina Akademiya im. S. M. Kirova (Military-Medical Order of Lenin Academy)

SUBMITTED: 06Feb63 ENCL: 00 SUB CODE: MT, OC

NO REF SOV: 000 OTHER: 000

Card 1/1

L 21566-66 EWT(1)/EPF(n)-2/EWG(m) IJP(c) AT

ACC NR: AP6008748 SOURCE CODE: UR/0386/66/003/006/0243/0247

AUTHOR: Burchenko, P. YA.; Vasilenko, B. T.; Volkov, YE. D.; Nikolayev, R. M.; Potapenko, V. A.; Tolok, V. T.

ORG: Physicotechnical Institute, Academy of Sciences, UkrSSR (Fiziko-tekhnicheskiy institute Akademii nauk UkrSSR)

TITLE: Excitation and thermalization of plasma oscillations in a stellarator

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 6, 1966, 243-247

TOPIC TAGS: controlled thermonuclear reaction, plasma confinement, plasma electron oscillation, plasma electron temperature, ~~Sirius~~ magnetic trap, electric field

ABSTRACT: The authors studied the influence of collective processes on the behavior of a plasma in a closed stellarator-type magnetic trap (Sirius), comprising a race-track with two trifilar helical windings placed on the toroidal sections. The stellarator had a vacuum chamber with axial length 600 cm and minor diameter 10 cm, a maximum retaining field $H_0 = 2 \times 10^4$ oe, and $\beta_c = 8\pi nkT/H_0^2 = 7.5 \times 10^{-4}$. To excite intense collective oscillations, a longitudinal electric field of large amplitude ($E \geq E_k = 1.58 \times 10^{-8}\ n/T_e$), was applied to a plasma produced in the stellarator chamber by a pre-ionization generator. All the experiments were made at initial neutral-helium pressures 5×10^{-5} -- 8×10^{-4} mm Hg. The experiments consisted of measuring the plasma current and the loop voltage in the chamber, the plasma density, the x-radiation from the diaphragm limiting the plasma pinch and from the chamber walls, the

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L 21566-66
ACC NR: AP6008748

microwave radiation from the plasma, and the integral amount of light. With increase in field, the initially sinusoidal current signal became distorted, and after build-up of the oscillations, the current decreased to a value I = 100--200 A, at which level it remained for 10--20 μsec, although a rather large electric field was applied to the plasma. In all the intervals of the investigated neutral gas pressure and electric and magnetic field intensities the discharge was accompanied by microwave emission from the plasma at wavelengths λ = 2--4 cm. In stronger electric fields a broad spectrum of oscillations was excited in the plasma at wavelengths 4.6--200 cm, with the maximum radiated power in the 12--15 cm interval. In electric fields stronger than critical, the plasma emits also intense x-rays, from which it is deduced that the plasma contains a group of electrons with almost-Maxwellian velocity distribution and with a temperature that ranges from 4 to 9 kev. Measurements of the integral amount of light have shown that at the instant of excitation of the collective processes and appearance of x-radiation from the chamber walls the intensity of plasma glow decreases abruptly, thus confirming indirectly the fact that the electrons become heated.
Authors thank K. D. Sinel'nikov for interest in the work and valuable discussions.
Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 31Jan66/ ORIG REF: 003/ OTH REF: 002

Card 2/2 UDC

L 39804-66 EWT(d)/FSS-2/EEC(k)-2 IJP/GD-1

ACC NR: AP6011124 SOURCE CODE: UR/0424/66/000/001/0003/0005

AUTHORS: Klimov, D. M. (Moscow); Potapenko, V. A. (Moscow)

ORG: none

TITLE: Drift of a gyroscope in a Cardan suspension on a movable base

SOURCE: Inzhenernyy zhurnal. Mekhanika tverdogo tela, no. 1, 1966, 3-5

TOPIC TAGS: gyroscope, gyroscope motion, mathematical analysis, inertial axis

ABSTRACT: The drift of a friction-free gyroscope in a Cardan suspension is analyzed. As shown in Fig. 1, a small gyroscope is connected to the external ring of the main gyroscope. A mathematical analysis of the combined motion shows that the two drift rates, $\dot{\alpha}$ around the external axis and $\dot{\beta}$ around the internal axis, are expressed by

$$\langle\dot{\alpha}\rangle = \frac{abh_3\omega}{2H\cos^2\delta_1^\circ}\sin(\sigma-\sigma_1), \qquad \langle\dot{\beta}\rangle = 0.$$

The brackets in these expressions denote time averages. A more general analysis indicates that the motion of the gyroscope platform results in a rotation around the external axis relative to inertial space.

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L 39804-66

ACC NR: AP6011124

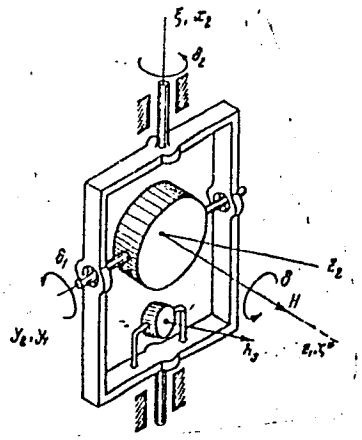

Fig. 1.

Orig. art. has: 13 equations and 4 figures.

SUB CODE: 17, 20/ SUBM DATE: 13Aug65/ ORIG REF: 002

Card 2/2 MLP

ZHABITSKIY, P.P. [Zhabyts'kyi, P.P.]; POTAPENKO, V.D.

Use of polyacrylamides for the improvement of the physicomechanical properties of superphosphates. Khim.prom. [Ukr.] no.1:32-34 Ja-Mr '64. (MIRA 17:3)

ZRAZHEVSKIY, G.N., kand. tekhn.nauk (g.Gomel'); POTAPENKO, V.L., inzh. (g.Gomel')

Transitorized rail flaw detector. Put' i put.khoz. 5 no.5:34-35 My '61. (MIRA 14:6)

(Railroads--Rails--Defects) (Transistors)

POTAPENKO, V.D., kand.khim.nauk; BROVCHENKO, M.D., inzh.

Waterproofing tensiometer transmitting elements when studying reinforced concrete. Bet. i zhel.-bet. 8 no.11:521-522 N '62. (MIRA 15:11)

(Tensiometers)
(Protective coatings)

Potapenko, V.I

135-4-14/15

SUBJECT: USSR/Welding

AUTHOR: Potapenko, V.I., Engineer

TITLE: Conference of Machinebuilding and Welding Engineers of the Stalino Region (Konferentsiya svarshchikov-machinostroiteley Stalinskoy oblasti).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 4, p 28, (USSR).

ABSTRACT: General information on the conference in Kramatorsk on 9-10 January 1957, organized by the Stalino Regional Board of the Scientific-Technical Society of Machinebuilding.

A considerable part of reports was concerned with problems of introducing the electric slag-welding method, and with the production of cast-welded and forged-welded constructions, etc. One report by Engineer A.F. Nadtochenko dealt with the experience of the Novo-Kramatorsk Plant in the production of welded press frames. The gusts were shown electric slag-welding of hydraulic turbines and generators, sheet-electrode welding "Svarka plastinchatymi electrodamy") of rolling mill frames, and devices for slag-welding at this plant.

Card 1/2